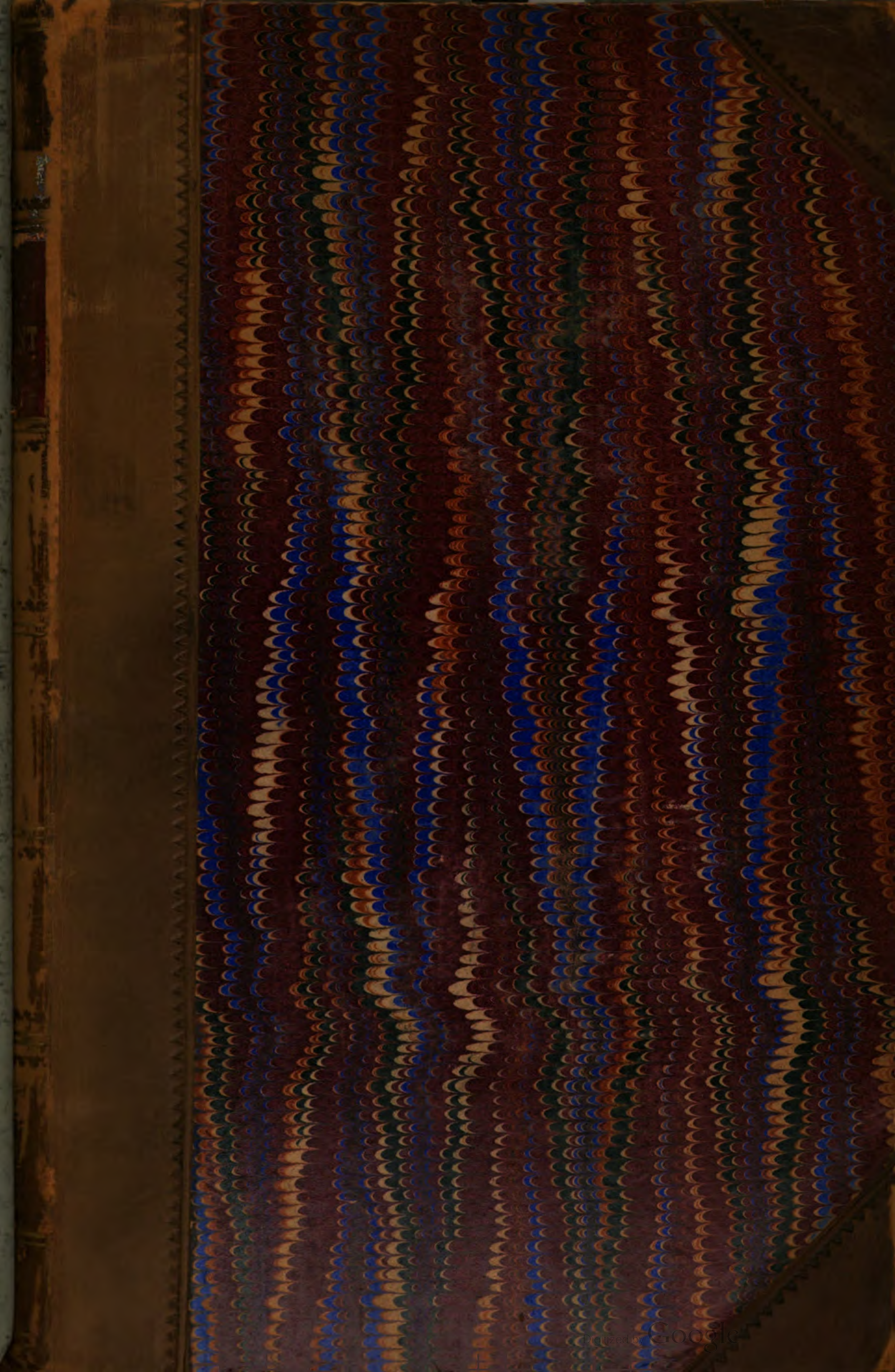
This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

https://books.google.com



HANOVER BUIL
SOUTHAMPTON

525

ARMY MEDICAL DEPARTMENT

REPORT

FOR THE YEAR 1892;

WITH APPENDIX.

VOLUME XXXIV.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS,
PRINTERS IN ORDINARY TO HER MAJESTY.

And to be purchased, either directly or through any Bookseller, from
EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; or
JOHN MENZIES & Co., 12, HANOVER STREET, EDINBURGH, and
90, WEST NILE STREET, GLASGOW; or
HODGES, FIGGIS, & Co., LIMITED, 104, GRAFTON STREET, DUBLIN.

1894.

Price Two Shillings and Eightpence.

TO THE RIGHT HONOURABLE

THE SECRETARY OF STATE FOR WAR.

Sir,

I have the honour to submit the accompanying Report on the Health and Sanitary Condition of the Army for 1892.

I have the honour to be,
Sir,
Your most obedient
Humble Servant,
W. A. MACKINNON,
Director-General.

Medical Division, War Office,
1894.

CONTENTS.

PAGE

Letter from the Director-General to the Secretary of State for War - iii

REPORT.

I. Summary of the Health of White Troops at all Stations - 1

II. On the Health of the Troops serving in the UNITED KINGDOM—
Sickness and Mortality - 4
Invaliding - 9
On the influence of Age and Service on Sickness, Mortality, and Invaliding - 10
Remarks on the Prevalence of the principal Diseases in Military Districts - 12
Admissions, Deaths, and Invaliding, &c., from the different Arms of the Service - 13
Health Statistics of Corps - 13
Officers, Women and Children - 13
Vaccination - 15
Small-pox - 18
On the Recruiting of the Army - 18
Number of Recruits Inspected and Rejected - 18
Native Countries of Recruits inspected - 19
Number inspected for each Arm of the Service - 19
Previous occupations of Recruits - 20
Causes of Rejection of Recruits - 20
Ages of Recruits - 22
Tables showing the Heights, Weights, and Chest Measurements of Recruits - 23
Extent of Education of Recruits - 26

HOME STATIONS. *Sanitary Conditions—*

North-Eastern District - 27
North-Western District - 27
Eastern District - 28
Western District - 28
Southern District - 29
Netley - 29
Thames District - 30
South-Eastern District - 30
Home District - 31
Woolwich District - 31
Aldershot - 31
Channel Islands - 32
North British District - 32
Ireland:
Belfast District - 33
Dublin District - 33
Cork District - 34
Curragh District - 34

PAGE
III. On the Health of the Troops serving in the MEDITERRANEAN—
I. Gibraltar:
Sickness and Mortality - - - - - - 35
Sanitary Conditions - - - - - - 39
II. Malta:
Sickness and Mortality - - - - - - 40
Sanitary Conditions - - - - - - 43
Royal Malta Artillery:
Sickness and Mortality - - - - - - 44
Sanitary Conditions - - - - - - 45
III. Cyprus:
Sickness and Mortality - - - - - - 45
Sanitary Conditions - - - - - - 47

IV. On the Health of the Troops serving in the DOMINION OF CANADA—
Sickness and Mortality - - - - - 48
Sanitary Conditions - - - - - - 50

V. On the Health of the Troops serving in BERMUDA—
Sickness and Mortality - - - - - - 51
Sanitary Conditions - - - - - - 53

VI. On the Health of the Troops serving in the WEST INDIES—
I. White Troops:
Sickness and Mortality - - - - - - 54
Sanitary Conditions - - - - - - 58
II. Black Troops:
Sickness and Mortality - - - - - - 58
Sanitary Conditions - - - - - - 62

VII. On the Health of the Troops serving in WESTERN AFRICA—
I. White Troops:
Sickness and Mortality - - - - - - 63
II. Black Troops:
Sickness and Mortality - - - - - - 63
Sanitary Conditions - - - - - - 65

VIII. On the Health of the Troops serving in SOUTH AFRICA AND ST. HELENA—
Sickness and Mortality - - - - - - 66
Sanitary Conditions - - - - - - 70

IX. On the Health of the Troops serving in the MAURITIUS—
Sickness and Mortality - - - - - - 71
Sanitary Conditions - - - - - - 73

X. On the Health of the Troops serving in CEYLON—
I. White Troops:
Sickness and Mortality - - - - - - 74
Sanitary Conditions - - - - - - 76
II. Black Troops:
Sickness and Mortality - - - - - - 77

XI. On the Health of the Troops serving in CHINA—
I. White Troops:
Sickness and Mortality - - - - - - 78
Sanitary Conditions - - - - - - 80
II. Asiatic Troops:
Sickness and Mortality - - - - - - 81

PAGE

XII. On the Health of the Troops serving in the STRAITS SETTLEMENTS—
  I. White Troops:
    Sickness and Mortality - - - - - - 82
    Sanitary Conditions - - - - - - 84
  II. Asiatic Troops:
    Sickness and Mortality - - - - - - 84

XIII. On the Health of the European Troops serving in INDIA—
    Sickness and Mortality - - - - - - 85
  I. Bengal:
    Sickness and Mortality - - - - - - 86
    Sanitary Conditions - - - - - - 112
  II. Madras:
    Sickness and Mortality - - - - - - 117
    Sanitary Conditions - - - - - - 124
  III. Bombay:
    Sickness and Mortality - - - - - - 131
    Sanitary Conditions - - - - - - 142

XIV. On the Health of Troops serving in EGYPT—
    Sickness and Mortality - - - - - - 148
    Sanitary Conditions - - - - - - 152

XV. On the Health of the Troops on BOARD SHIP—
  I. Troops proceeding on Foreign Service - - - 153
  II. „ returning from ditto - - - - 154
  III. „ proceeding from one Station abroad to another - 154
  IV. Invalids returning to England - - - - 155
  V. Sanitary condition of ships - - - - - 155

ABSTRACTS—HOME.

No. I.—United Kingdom, Summary of the Health of the Troops serving in - - - - - - - 156
  A.—England, ditto - - - - - - 158
  B.—Scotland, ditto - - - - - - 160
  C.—Ireland, ditto - - - - - - 162
  D.—Summary of the Health of the Officers, Women, and Children in the United Kingdom - 164

ABSTRACTS—FOREIGN.

No. II.—Gibraltar, Summary of the Health of the Troops serving in - - - - - - - - 166
  III.—Malta, ditto - - - - - - - 168
  IIIA.—Royal Malta Artillery, ditto - - - - 170
  IV.—Cyprus, ditto - - - - - - - 172
  V.—Dominion of Canada, ditto - - - - 174
  VI.—Bermuda, ditto - - - - - - - 176
  VII.—West Indies, White Troops, ditto - - - 178
  VIII.—Ditto, Black Troops, ditto - - - - 180
  IX.—West Africa, ditto - - - - - - 182
  X.—South Africa and St. Helena, White Troops, ditto - 184
  XI.—Mauritius, ditto - - - - - - - 186
  XII.—Ceylon, ditto - - - - - - - 188
  XIII.—China, ditto - - - - - - - 190
  XIV.—Straits Settlements - - - - - 192

PAGE

INDIA.

Bengal.

No. XV.—Summary of the Health of the Troops serving in 194
XVI.—Admissions and Deaths by Classes of Diseases in each of the Military Divisions 196
XVII.—Admissions and Deaths at the chief Stations 200
XVIII.—Enteric Fever 202
XIX.—Cholera 205
XX.—Dysentery, Diarrhœa, and Hepatitis in each Division 206
XXI.—Ditto, Seasonal prevalence 207

Madras.

XXII.—Summary of the Health of the Troops serving in 208
XXIII.—Admissions and Deaths by Classes of Diseases in each of the Military Divisions 210
XXIV.—Admissions and Deaths at the chief Stations 212
XXV.—Enteric Fever 214
XXVI.—Cholera 215
XXVII.—Dysentery, Diarrhœa, and Hepatitis in each Division 216
XXVIII.—Ditto, Seasonal prevalence 217

Bombay.

XXIX.—Summary of the Health of the Troops serving in 218
XXX.—Admissions and Deaths by Classes of Diseases in each of the Military Divisions 220
XXXI.—Admissions and Deaths at the chief Stations 222
XXXII.—Enteric Fever 223
XXXIII.—Cholera 223
XXXIV.—Dysentery, Diarrhœa, and Hepatitis in each Division 224
XXXV.—Ditto, Seasonal prevalence 225
XXXVI.—Egypt.—Summary of the Health of the Troops serving in 226
XXXVII.—Troops on Board Ship, Summary of the Health of the 228
XXXVIII.—Influence of Age on Mortality in Foreign Commands 230
XXXIX.—Health Statistics of Corps in the United Kingdom 231
XL.—Health Statistics of Corps in Foreign Commands, exclusive of India 248
XLI.—Health Statistics of Corps in Bengal 264
XLII.—Health Statistics of Corps in Madras 272
XLIII.—Health Statistics of Corps in Bombay 276

APPENDICES.

PAGE

I.—Report on the Progress of Hygiene for the year 1893. By Brigade Surgeon-Lieut.-Colonel J. Lane Notter, M.A., M.D., Army Medical Staff, Professor of Military Hygiene at the Army Medical School, Netley - - - 281

II.—List of Operations, 1893. By Brigade Surgeon-Lieut.-Colonel W. F. Stevenson, Army Medical Staff, Professor of Military Surgery, and Surgeon-Cartain H. R. Whitehead, Assistant Professor Army Medical School, Netley - 292

III.—Report on the Proceedings of the Seventh Session of the French Congress of Surgery, 1893. By Brigade Surgeon-Lieut.-Colonel W. F. Stevenson, Army Medical School, Netley - 303

IV.—Medical Report on the Mission of Sir G. Euan-Smith to Fez in 1892, with one plan. By Surgeon Captain W. G. Macpherson, Army Medical Staff - - - - - 314

V.—Notes on the prevalent Fevers of Alexandria, 1889–1892, with one plan and six charts. By Surgeon-Captain F. J. Morgan, Army Medical Staff - - - - - - 380

VI. —Notes on Enteric Fever, the result of three years' experience of the disease in Mhow, Central India. By Surgeon-Major C. G. D. Mosse, F.R.C.S.I., Army Medical Staff - - 399

VII.—Clinical Lecture on "The Influence of Myopia on Military Service." By Surgeon-Captain H. R. Whitehead, F.R.C.S., Eng., Assistant Professor of Military Surgery, Army Medical School - - - - - - - - 400

VIII.—A case of complicated fracture of lower jaw, with extensive comminution from gunshot wound, Lee-Metford Rifle. By Surgeon-Captain M. O'Halloran, Army Medical Staff 406

IX.—Meteorological Observations at Netley and Foreign Stations, 1891 - - - - - - - - - 410

X.—The Parkes Memorial Prize - - - - - - 424

XI.—The Alexander Memorial Fund - - - - - 425

ARMY MEDICAL DEPARTMENT REPORT FOR 1892.

STATISTICAL REPORT.

Troops at Home and Abroad.

The average annual strength of the troops serving at home and abroad in 1892, as computed from the returns received by the Army Medical Department, was 199,049 warrant officers, non-commissioned officers and men (exclusive of Colonial Corps); the admissions into hospital in this force were 206,034 and the deaths 1,902. The rates represented by these numbers are for admissions into hospital 1035·1 and for deaths 9·46 per 1,000 of the average annual strength, the latter being calculated on a strength of 200,984, which includes detached men.

The statistics of some of the most important of the results of sickness, in every Command in which the troops were stationed, are exhibited in the following Table:—

1892.

White Troops.	Average Strength.	Admitted into Hospital.	Died.	Sent Home as Invalids.	Discharged as Invalids.	Constantly non-effective from Sickness.
Troops at Home and Abroad	**199,049**	**206,034**	**1,902**	**2,246**	**2,629**	**11,402·96**
United Kingdom	100,302	76,364	448	—	1,470	4287·89
Gibraltar	4,936	3,364	16	62	47	228·04
Malta	7,847	5,686	68	181	110	371·84
Cyprus	531	380	4	27	4	20·99
Egypt	3,102	3,162	44	74	30	210·44
Canada	1,392	631	2	10	8	25·51
Bermuda	1,363	688	12	15	6	34·75
West Indies	1,201	1,256	12	38	24	85·66
South Africa and St. Helena	3,209	3,111	18	103	51	179·59
Mauritius	560	597	10	28	8	24·94
Ceylon	1,261	1,320	12	11	7	64·65
China	1,382	1,763	17	12	8	83·06
Straits Settlements	1,205	1,209	13	24	12	77·79
India	68,045	103,070	1,197	1,661	844	5707·81
On board Ship	2,713	3,433	29	—	—	—

Troops at Home and Abroad.

1892.

White Troops.	Ratio per 1,000 of Strength. Admitted.	Died.	Sent Home as Invalids.	Discharged as Invalids.	Constantly non-effective from Sickness.	Average sick-time to each Soldier.	Average duration of each case of Sickness.
	*	†	‡	§	‖	Days.‖	Days.‖
Troops at Home and Abroad	**1035·1**	**9·46**	**23·39**	**13·26**	**58·08**	**21·26**	**20·60**
United Kingdom	761·3	4·38	—	14·38	42·75	15·64	20·55
Gibraltar	681·5	3·24	12·56	9·52	46·19	16·91	24·81
Malta	724·6	8·67	23·06	14·02	47·38	17·34	23·93
Cyprus	715·6	7·53	50·84	7·53	39·53	14·46	20·22
Egypt	1019·3	14·18	23·86	9·67	67·84	24·83	24·36
Canada	453·3	1·44	7·18	5·75	18·32	6·71	14·80
Bermuda	504·8	8·80	11·00	4·40	25·49	9·33	18·49
West Indies	1045·8	10·00	31·64	20·00	71·32	26·10	24·96
South Africa and St. Helena	969·5	5·61	32·08	15·89	55·96	20·48	21·13
Mauritius	1066·0	17·86	50·00	14·28	44·53	16·30	15·29
Ceylon	1046·8	9·51	8·72	5·55	51·27	18·76	17·93
China	1275·7	12·30	8·68	5·79	60·10	22·00	17·24
Straits Settlements	1003·3	10·79	19·92	9·96	64·55	23·63	23·55
India	1514·7	17·59	24·41	12·40	83·88	30·70	20·27
On board Ship	1265·4	10·69	—	—	—	—	—

* Calculated on strength, excluding men detached (1,935).

† Calculated on strength, including men detached.

‡ Calculated on strength, excluding United Kingdom and troops on board ship.

§ Calculated on strength, including men detached, and excluding troops on board ship.

‖ Calculations exclude men detached and troops on board ship.

1882 to 1891.

White Troops.	Aggregate strength for 10 years.	Admitted into Hospital.	Deaths.	Sent Home as Invalids.	Discharged as Invalids.	Constantly non-effective from Sickness.
Troops at Home and Abroad	**1,855,203**	**1,923,619**	**17,868**	**25,542**	**29,917**	**103,118**
United Kingdom	934,392	756,381	5,474	—	17,388	42,450
Gibraltar	46,119	35,965	278	1,051	397	2,155
Malta	56,325	38,094	461	1,237	694	2,499
Cyprus	6,223	5,160	54	85	34	263
*Egypt	53,450	64,701	1,271	3,847	1,376	3,868
Canada	14,336	8,628	73	294	255	476
Bermuda	14,039	8,432	142	220	138	441
West Indies	9,699	10,274	98	210	120	532
South Africa and St. Helena	34,611	27,319	297	1,060	654	1,830
Mauritius	4,330	7,326	73	179	65	348
Ceylon	10,337	11,446	128	319	153	633
China	11,592	12,583	113	345	316	596
Straits Settlements	10,520	12,909	68	258		708
India	621,968	895,626	9,163	16,437	8,327	46,319
On board Ship	27,262	28,775	175	—	—	—

* For nine years only (1883–91).

Troops at Home and Abroad.

1882 to 1891.

White Troops.	Ratio per 1,000 of Strength. Admitted.	Died.	Sent Home as Invalids.	Discharged as Invalids.	Constantly non-effective from Sickness.	Average sick-time to each Soldier.	Average duration of each case of Sickness.
Troops at Home and Abroad	**1036·9**	**9·52**	**28·58**	**16·18**	**56·41**	**20·59**	**19·86**
United Kingdom	809·5	5·73	—	18·19	45·43	16·58	20·48
Gibraltar	779·8	6·03	22·79	8·61	46·73	17·05	21·87
Malta	676·3	8·18	21·96	12·32	44·37	16·19	23·94
Cyprus	829·2	8·68	13·66	5·46	42·26	15·42	18·60
*Egypt	1210·5	23·78	71·97	25·74	72·37	26·41	21·82
Canada	602·1	5·09	20·52	17·79	33·22	12·12	20·14
Bermuda	600·6	10·11	15·67	9·83	31·41	11·46	19·09
West Indies	1059·3	10·10	21·65	12·37	54·85	20·02	18·94
South Africa and St. Helena	789·3	8·58	30·62	18·89	52·87	19·30	24·45
Mauritius	1691·9	16·86	41·34	15·01	80·37	29·33	17·34
Ceylon	1107·3	12·38	30·86	14·80	61·23	22·35	20·18
China	1085·5	9·75	29·76	14·29	51·38	18·75	17·28
Straits Settlements	1227·1	6·46	24·52		67·27	24·55	20·01
India	1440·0	14·73	26·43	13·39	74·47	27·18	18·88
On board Ship	1055·5	6·42	—	—	—	—	—

* For nine years only (1883-91).

II.—ON THE HEALTH OF THE TROOPS SERVING IN THE UNITED KINGDOM.

Sickness and Mortality.

United Kingdom.

The average strength of warrant officers, non-commissioned officers and men serving in the United Kingdom during the year 1892, was according to the annual returns furnished by medical officers, 100,302. This does not include certain men detached from their corps, the average number of whom is computed to have been 1,935.

The most important of the statistics of sickness and mortality among the troops quartered in the three great divisions of the Kingdom, England and Wales, Scotland, and Ireland, and also among those in the United Kingdom as a whole, are shown in the following table:—

1892.	Average Strength.	Admissions.	Deaths.	Invalids.	Constantly Sick.
England and Wales - -	71,416	56,589	320	1,050	3210·54
Scotland - - - - -	3,706	2,124	17	72	91·83
Ireland - - - - -	25,180	17,651	111	348	985·52
United Kingdom -	100,302	76,364	448	1,470	4287·89

(*continued.*)

	Ratios per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each case of Sickness.
	Admissions.	Deaths.	Invaliding.	Constantly Sick.	Days.	Days.
England and Wales - -	792·4	4·43	14·53	44·95	16·45	20·76
Scotland - - - - -	573·1	4·59	19·43	24·78	9·07	15·82
Ireland - - - - -	701·0	4·22	13·22	39·14	14·32	20·43
United Kingdom -	761·3	4·38	14·38	42·75	15·64	20·55

Comparing the above with the corresponding table in the previous year it is observed that in England and Wales the admission rate shows a decline of 8·6 per 1,000, the death rate one of ·64, but the constantly sick rate an increase of 1·18. The average sick time to each soldier was longer by almost half a day, and the average duration of each case of sickness by nearly a whole day. Compared with the average ratios for the preceding six years the admission rate has declined by 13·5, the death rate by 1·09, and the constantly sick rate by 1·19. The average sick time to each soldier and the duration of each case of sickness are both shorter by about a third and a seventh of a day respectively.

United Kingdom.

The admission rate in Scotland was lower than in preceding year by 89·6, the death rate was higher by ·31, and the constantly sick rate lower by 1·83.

The average sick time to each soldier was shorter by ·64 of a day, and the average duration of each case of sickness longer by 1·16 days. Compared with previous sexennium there is a decrease in the admission, mortality, and constantly sick rates of 109·6, 1·08, and 5·88 per 1 000, and of 2·12 days and ·57 of a day respectively in the average sick time and average duration of cases.

In Ireland, as compared with the previous year, there is a decrease of 7·0 in the admission rate, and of ·46 in death rate, but an increase of 1·11 in constantly sick rate. The sick time and duration of cases both show an increase of ·44 and ·83 of a day respectively. As compared with previous sexennium, the admission, death, and constantly sick rates show a decrease. The sick time and duration of cases show a decline in the former of ·22 of a day, and in the latter an increase of ·25 of a day.

In the United Kingdom, as a whole, the admission and death rates show a decline as compared with 1891 of 10·9 and ·56 respectively, and the constantly sick rate an increase of 1·09. The average sick time and duration of cases were both higher by ·44 and ·86 of a day respectively. Compared with the previous decennium a decrease is observed of 48·2 in the admission rate, 1·35 in the death rate, and 2·68 in the constantly sick rate. The average sick time declined by nearly a day, but the duration of cases increased fractionally.

The total loss by death and final discharge was 1,918 men, equal to a ratio of 18·76 per 1,000, which is less than the previous year by ·69.

The principal statistics of sickness and mortality, arranged according to the different groups and orders of diseases, are given in Abstract I. for the whole of the troops in the United Kingdom, and in Abstracts A., B., and C. for the troops quartered in England and Wales, Scotland, and Ireland respectively.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—The admissions for other *eruptive fevers* were 902, and there were 2 deaths. There were 6 cases of *small-pox* as against 1 in 1891.

Scarlet Fever caused 361 admissions and 2 deaths. Of these 305 occurred in England, principally in the Home, Woolwich, and Southern Districts.

In Scotland there were only six cases. In Ireland 50 cases occurred, principally in the Dublin District.

Measles caused 87 admissions and no deaths.

Of the remaining cases of eruptive fevers 431 were *cow-pox,* 11 *chicken-pox,* and 12 *epidemic rose rash.*

Enteric Fever.—The admissions were 132, and deaths 23; in previous year the corresponding numbers were 109 and 17. The admission ratio was 1·3, higher than previous year by ·2, and below previous decennial rate by ·1. The death rate was ·22 as against ·17 in previous year, and ·31 in previous decennium. The per-centage of mortality to attack was 17·4, as contrasted with 15·6 in previous year. In England and Wales there were 84 admissions and 15 deaths. In Scotland only 1 admission. In Ireland there were 47 admissions and 8 deaths. In England the largest number of cases in any station was 28 at Aldershot with 3 deaths; 9 of the cases were men who had previously been employed at the Military Tournament in London. No definite cause has been assigned for the disease, but at the present time a thorough enquiry is being made into the system of drainage, more especially with regard to the state of the sewage farm. The next largest number was at Portsmouth, 11 cases and 3 deaths; no definite cause assigned. The next in London with 6 cases, probably originating at the Royal Military Tournament. The remaining cases were scattered over a large number of stations, but no serious outbreak or bad local insanitary condition was brought to notice. In Ireland, 31 cases, out of the 47 reported, occurred in Dublin itself, with 3 deaths. The disease was, generally speaking, contracted out of barracks, and Dublin is notoriously unhealthy as regards this disease.

Other Continued Fevers caused 379 admissions and 2 deaths, being in the ratios per 1,000 of 3·8 and ·02. The admission rate was lower than the previous year by ·9. Except 1 case of cerebro-spinal fever (which proved fatal), the

United Kingdom.

cases were all simple continued fever. The remaining death was due to typhus fever.

Dysentery caused 34 admissions, or a rate of ·3, just half that of the preceding year.

Influenza.—The number of cases was 1,795 with 5 deaths, including that of a man absent from his corps, the admission rate being 17·9, and death rate ·05, as against 19·3 and ·03 in previous year. The cases were generally very mild in character. The largest number of cases in England occurred in the Eastern, South-Eastern, and Home Districts. In Ireland the cases mostly occurred in the Dublin and Cork districts. Only 2 cases occurred in Scotland.

The admissions for other diseases of the first sub-group were 71, giving a rate of ·6 per 1,000. The principal cause was mumps, with 65 cases; the other 6 admissions were for diphtheria.

Malarial Fevers caused 649 admissions and no deaths, a rate of admission of 6·5. Ague accounted for 635 cases, remittent fever for 10, and malarial cachexia for 4.

Septic Diseases caused 164 admissions and 6 deaths, or ratios of 1·6 and ·06 respectively, being a fractional increase in the former and no difference in the latter as compared with previous year. Of these cases erysipelas caused 156 admissions and 2 deaths. The remaining cases being pyæmia 6 (3 fatal), septicæmia 1 (fatal), and phagedæna 1.

Venereal Diseases.—The admissions for primary syphilis were 6,692, or a rate of 66·7; this is higher by 3·6 than in the previous year, but lower than the six years' average rate by the same amount. The number of men constantly sick was 614·40, being in a ratio of 6·12, an increase over previous year of ·59, but a decrease of ·27 below previous six years' rate. In England and Wales the admission rate was 73·5, being higher than in the previous year by 2·1, and the constantly sick rate was 6·72, also higher by ·43 per 1,000.

In Scotland there is an increase of 1·0 in admission rate and of ·18 in the constantly sick rate.

In Ireland the admission rate was 53·6 and constantly sick rate 5·04, an increase over that of the previous year in both cases of 8·1 and 1·11 respectively.

Simple venereal ulcer caused 1,248 admissions, and 89·95 men were constantly sick from this cause, the ratios being 12·4 and ·90 respectively. If the sickness from this cause be added to that from primary syphilis, it is seen that the admission rate for primary venereal sores in the United Kingdom was 79·1 per 1,000, and the constantly sick rate 7·02. As compared with previous year there is an increase in both instances of 2·0 and ·52 respectively, and as against the previous six years a decrease in both rates of 14·9 and 1·05 respectively. In England and Wales the admission rate was 85·8 and the constantly sick rate 7·61, which show a decrease on similar rates in previous year of ·8 in admissions and ·36 in constantly sick, and as compared with previous six years these rates are lower by 14·5 and 1·12 respectively. In Scotland the admission rate was 40·7 and constantly sick rate 2·92, as compared with 44·1 and 2·96 per 1,000 respectively for the previous year, and with 57·8 and 4·16 the average of the previous six years. In Ireland the admission rate was 66·1 and constantly sick rate 5·95, as compared with 59·8 and 4·95 in previous year, and 81·5 and 6·82 in previous six years.

Secondary Syphilis.—The admissions for this disease in the United Kingdom were 3,392, and there were 6 deaths, and 334·54 men were constantly inefficient from this cause. The admission ratio was 33·8, and the constantly sick rate 3·34 per 1,000. As compared with previous year there is a decrease of 1·4 in the admission rate, and an increase of ·05 in the constantly sick rate, whilst as regards previous six years, there is a decrease in both instances of 3·7 and ·04 respectively.

In England and Wales the admission rate was 37·4, and constantly sick rate 3·74, a decrease as against the previous year of 1·2 in the former, but an increase of ·15 in the latter. The admission rate shows a decrease below the previous sexennial rate, but the constantly sick rate a fractional increase.

In Scotland the admission rate was 24·8, and constantly sick 1·48, a decrease in both cases of 5·8, and ·88 below previous year, and also of 9·1 and ·98 below previous sexennium.

United Kingdom.

In Ireland the admission rate was 24·9, and constantly sick rate 2·46, a decrease in the first of 1·3, and also in the second of ·13 as compared with previous year. There was also a decrease of 6·5 and ·28 as against previous sexennial average rate.

Gonorrhœa.—The admissions were 8,856, and the average number constantly sick 611·37. The ratios, therefore, were 88·3 and 6·10 respectively. Compared with previous year there is an increase in each rate of 3·2 and ·55 respectively; and with previous sexennium a decrease of 7·5 and ·09.

In England and Wales the admission and constantly sick rates were 92·3 and 6·39, an increase in each case over previous year of 3·1 and ·63 respectively, but as regards the sexennial period a decrease of 5·7 and ·01.

In Scotland the ratios were 67·7 and 3·51. As against previous year there is an increase of 5·9 and ·26 respectively, and against previous sexennium a decrease of 4·6, with no change in the constantly sick rate.

In Ireland the ratios were 80·0 and 5·63. Compared with previous year there is an increase of 2·8 and ·32 respectively, and as against previous sexennium a decrease of 13·2 and ·38 respectively.

Taking all forms of venereal disease together the admissions were 20,188, and constantly sick 1650·26. The total admission ratio per 1,000 being 201·2, and the constantly sick rate 16·46. As compared with previous year these ratios show an increase of 3·8 and 1·12 respectively, and as regards the sexennial period a decrease of 26·1 and 1·18 respectively.

In England and Wales alone the ratios for admissions and constantly sick were 215·5 and 17·74 as compared with 212·8 and 16·60 in previous year, and with 238·1 and 18·78 in previous sexennium.

In Scotland these rates were 133·2 and 7·90, as compared with 136·5 and 8·56 in previous year, and with 164·0 and 10·21 for previous sexennium.

In Ireland the admission and constantly sick rates equalled 171·0 and 14·04, as against 163·2 and 12·85 for 1891, and 206·1 and 15·57 for previous sexennium.

The greatest prevalence of venereal disease in any district was in the Home, where the admission ratio amounted to 288·6; this was followed by the Channel Islands with 279·1, Dublin district 271·9, the Eastern district 261·2, North-Eastern 220·5, Aldershot 216·3, Western 210·3, Woolwich 209·0, Southern 189·3, Belfast 186·3, Thames 179·0, South-Eastern 176·7, North-Western 167·8, Curragh 143·1, North British 132·5, and the Cork district 86·3. In the previous year the greatest prevalence was in the Channel Islands, and then at Aldershot, and the least in the Cork district, and then in the Curragh. Compared with corresponding results in the previous year the admission ratio has increased in the Home district by 45·8, in the Thames district by 44·7, in the Dublin by 43·1, in the North-Eastern by 37·2, in the Eastern by 29·4, in the Western by 15·5, in the North-Western by 11·4, in the Curragh by 10·4, in the Belfast by 8·1, and in the Woolwich district by 2·7; while it has decreased in the Aldershot district by 38·7, in the Southern by 30·9, in the Cork district by 29·7, in the South-Eastern by 8·6, in the North British by 4·0, and in the Channel Islands by ·9.

Parasitic Diseases numbered 33 as against 26 in previous year.

In the next sub-group 7 cases of *scurvy* are shown, and there were 207 admissions for alcoholism and 3 deaths, out of these admissions 13 were for delirium tremens. In the next group for *debility* and *malformations*, 726 admissions are recorded, being in the ratio of 7·2, fractionally below last year's rate.

Rheumatism.—3,567 admissions and 6 deaths are recorded, including that of a man absent from his corps, the respective ratios being 35·6 and ·06 as against 37·3 and ·05 in 1891. Out of the total number of admissions 287 were for rheumatic fever, England showing 224 of these, Scotland 3, and Ireland 60. The deaths were 5 in England and 1 in Scotland.

Tubercular Diseases.—For these diseases the admissions were 312 and deaths 81, including those of 7 men absent from their corps, the respective ratios being 3·1 and ·79. As compared with previous year, both these ratios show a fractional decrease, and compared with previous sexennium a decrease of ·6 and ·21 respectively. Of the total number of admissions 295 were for tubercle of lung, with 70 deaths. Of these, 205 admissions and 56 deaths occurred in England and Wales, 12 admissions and 2 deaths in Scotland, and 78 admissions and 12 deaths in Ireland.

United Kingdom.

Other diseases of this group caused 517 admissions and 11 deaths, being in ratios of 5·2 and ·11 respectively, fractionally below the rates of last year. Amongst the admissions were 344 non-malignant new growth, 104 anæmia, 42 scrofula, 11 purpura, 8 diabetes, and 7 malignant disease.

LOCAL DISEASES.—*Diseases of the Nervous System.*—There were 879 admissions and 26 deaths, including those of 3 men detached from their corps, being in the ratios of 8·7 and ·25 per 1,000 as against 8·2 and ·26 in previous year.

The diseases causing most admissions were neuralgia 405, epilepsy 189, paralysis 62, inflammation of brain and membranes 20. The cases of mental disease comprised 55 dementia, 30 mania, 24 melancholia, 8 idiocy, and 5 of other forms of insanity. The deaths included 12 inflammation of brain, 4 paralysis, 2 apoplexy, and 2 abscess of brain.

Diseases of the Eye caused 1,108 admissions and no deaths, being in the admission ratio of 11·0, slightly above the rate of the preceding year. Out of the total number of admissions 739 were for conjunctivitis and 75 for iritis.

Diseases of other Organs of Special Senses.—808 admissions and 1 death are returned, the admission rate being 8·0, slightly below that of last year. Of the admissions 777 were for affections of the ear and 31 for those of the nose. The death was from inflammation of the middle ear.

Diseases of the Circulatory System caused 881 admissions and 39 deaths, including two men detached from their corps. The admission and mortality rates were 8·8 and ·38 per 1,000 respectively. These figures show a decrease of ·9 in admission rate and an increase of ·02 in death rate as compared with previous year, and as against previous sexennium a decrease in both rates of ·9 and ·04 respectively. Of the admissions 376 were for palpitation, 299 for valvular disease of heart, and 139 for varicose veins. The causes of death were 20 valve disease of heart, 8 fatty degeneration of heart, 4 peri- and endocarditis, 4 aneurysm of aorta, 2 syncope, and 1 aneurysm.

Diseases of the Respiratory System.—6,932 admissions and 136 deaths are recorded, including 8 of men absent from their corps, the ratios being 69·1 and 1·33 respectively. A decrease is observed in both rates of 10·0 and ·20 as compared with previous year, and an increase of 1·3 in admission rate but a decrease of ·09 in mortality rate, as compared with previous six years. Of the total admissions bronchitic affections show 5,502, pneumonia 728, pleurisy 322, laryngitis 178, pneumonic phthisis 48, and asthma 39. The deaths were 91 pneumonia, 18 pneumonic phthisis, 10 pleurisy, 9 bronchitis, 3 hæmorrhage of lung, 2 each empyema and œdema glottidis, and 1 laryngitis.

Diseases of the Digestive System caused 12,102 admissions and 26 deaths, including that of a man detached from his corps, giving ratios of 120·6 and ·26 respectively. Compared with last year's rates an increase of 6·6 in admission and a decrease of ·08 in death rate is seen. As compared with previous sexennium an increase of 17·8 in admission rate, but a decrease of ·10 in mortality rate, is shown. Of the admissions, 8,387 were due to affections of the mouth and throat; then comes dyspepsia with 1,298, diarrhœa 696, hepatic affections, including jaundice, 417, also 4 for hepatic abscess.

The deaths were due to peritonitis 7, typhlitis 5, abscess of liver 4, enteritis 2, and one each noma, hepatitis, intestinal strangulation, gastritis, post-pharyngeal abscess, congestion of liver, volvulus, and intussusception of bowel.

Diseases of the Lymphatic and Glandular System.—These caused 1,476 admissions and 1 death, the ratios being 14·7 and ·01 respectively, as compared with 13·9 and ·02 in previous year. The greater part of the admissions were for inflammation and suppuration of glands. The death was due to splenitis.

Diseases of the Urinary System.—269 admissions and 10 deaths are recorded, being in ratios of 2·7 and ·10 respectively, as against 2·2 and ·18 in previous year. The principal causes of admission were incontinence of urine 139, Bright's disease 41, nephritis 23, cystitis 17, and diabetes insipidus 4. The deaths were due to Bright's disease 8, and nephritis 2.

Diseases of the Generative System.—2,555 admissions are returned, and there were no deaths. The admission rate was 25·5, a decrease below previous year of 1·3, and one of 15·4 below previous sexennial period. The principal causes of admission, apart from simple venereal ulcer, were balanitis 498, orchitis 498, stricture of urethra 119, varicocele 78, phimosis 46, hydrocele 44.

United Kingdom.

Diseases of the Organs of Locomotion caused 830 admissions and no deaths. The admission ratio was 8·3 per 1,000, being an increase of ·8 on previous year's rate, and also above the sexennial average period. The principal causes of admission were synovitis 505, ostitis 54, bursitis 53, and caries and necrosis 14 each.

Diseases of the Connective Tissue caused 2,284 admissions and 1 death, or ratios of 22·8 and ·01, a decrease in both instances of 1·6 and ·03 below previous year and also below the sexennial average rate. The large majority of the cases were due to abscess, and the death to inflammation of connective tissue.

Diseases of the Skin gave 7,138 admissions and no deaths. The admission ratio was 71·2, as against 76·5 in previous year, and 78·3 the average rate for previous six years. Itch caused the largest number of cases, 2,246, then boils, 1,408, followed by ulcers, eczema, and whitlow.

Poisons.—The number of admissions was 14, and there was 1 death. The causes were 4 opium, 2 oxalic acid, 2 poisoned wounds, and 1 each lead, mushroom, hydrochloric acid, mineral, fish, and morphia. The death was due to morphia.

Injuries.—10,269 admissions and 62 deaths are returned, being in the ratios of 102·4 and ·60 respectively, a decrease in both rates of 2·7 and ·10 below the previous year, and an increase in admission rate of 3·5 and decrease in mortality rate of ·12, as compared with previous six years.

The admissions for general injuries were 16, with 29 deaths, as against 10 and 37 in previous year. Multiple injury caused 7 admissions and 8 deaths. There were 19 deaths from drowning, 4 admissions for burns and scalds, 4 sunstroke, and 1 shock, while the remaining deaths were 1 from asphyxia caused by an epileptic fit, and 1 strangulation.

Local injuries caused 10,253 admissions and 33 deaths, as against 10,429 and 34 in previous year. The principal causes of admission were, as usual, contusions, wounds, and sprains. Gunshot wounds caused 27 admissions and 17 deaths, all but one suicidal, wounds caused 7 deaths, all suicidal, 5 deaths were due to fracture, 2 to concussion of brain, and 1 each to rupture of urethra and of kidney.

Suicides.—There were 24 cases among the troops in the United Kingdom as against 25 in previous year, and 21 the average for the previous ten years. The methods adopted were gunshot 16, cut-throat 7, strangulation 1. With regard to motives, 16 cases showed no motive, 3 were due to "depression of spirits," 2 to "drink," 2 "domestic troubles," 1 "fear of punishment." Out of the total number the verdicts of the inquests held were 23 "temporary insanity" and 1 "suicide." The average age of the men was nearly 33, and average service 12½ years.

Among the numerous surgical operations the following may be alluded to:—3 amputations of leg and 17 minor amputations, 4 cases of extirpation of eyeball, 2 cases of excision, 1 of tibia and one of testicle, 3 ligatures of large arteries, 2 cases of supra-pubic lithotomy, and numerous minor operations, such as tracheotomy, for the relief of fistula, for the removal of hæmorrhoids, dilation of stricture, &c., &c.

Invaliding.—The number of men discharged the service as medically unfit during the year was 1,470, being in the ratio of 14·38 per 1,000, which is below previous year's rate by ·13, and also below decennial rate by 3·81. In England and Wales alone there were 1,050 men discharged, the ratio being 14·53, lower than preceding year by 1·03. In Scotland the number was 72, or a rate of 19·43, an excess over last year of 8·84. In Ireland the number was 348, or a rate of 13·22, being higher than previous year by 1·0.

The principal causes of invaliding were diseases of circulatory system, 309 men being invalided, or a rate of 3·02. Next came tubercular diseases with 171, and diseases of the nervous system 187, giving ratios of 1·67 and 1·83 respectively. Amongst the latter were 82 cases of mental disease. Diseases of the respiratory system caused 99 cases of discharge, or a ratio of ·97. Next were diseases of the organs of locomotion 93 cases, local injuries 76, diseases of digestion 75, debility 73, and secondary syphilis 72.

United Kingdom.

The following tables have been prepared to show the influence of age and length of service on sickness, mortality, and invaliding among the troops serving in the United Kingdom during the year:—

Ages.	Average Strength.	Ad-missions.	Deaths.	In-valided.	Ratios per 1,000 of Strength.		
					Ad-missions.	Mor-tality.	In-validing.
Under 20 years - -	32,914	29,089	100	353	883·8	3·04	10·72
From 20 to 24 years -	34,258	35,047	128	693	1023·0	3·74	20·23
„ 25 „ 29 „ -	18,707	8,581	95	253	458·7	5·08	13·52
„ 30 „ 34 „ -	7,838	2,135	47	95	272·4	6·00	12·12
„ 35 „ 39 „ -	4,318	1,027	36	46	237·8	8·34	10·65
40 years and upwards -	2,267	485	42	30	213·9	18·53	13·23
Total - -	100,302	76,364	448	1,470	761·3	4·38*	14·38*

* Calculated on strength, including men detached (1,935).

From the above it will be seen that the highest admission rate, at any age, was between 20 and 25 years, being 1023·0, the next highest, 883·8, was among men under 20.

The mortality was lowest in those under 20 years, and increase follows in regular sequence at each subsequent quinquennium. The invaliding ratios follow a sequence similar to that of preceding year, except between the ages of 35-40 years, which shows a marked decrease.

Service.	Average Strength.	Ad-missions.	Deaths.	In-valided.	Ratios per 1,000 of Strength.		
					Ad-missions.	Mor-tality.	In-validing.
Under 1 year - -	32,736	32,712	103	420	999·3	3·15	12·83
From 1 to 2 years -	17,012	15,310	57	297	899·9	3·35	17·46
„ 2 „ 3 „ -	9,864	7,856	37	156	796·4	3·75	15·81
„ 3 „ 4 „ -	7,215	4,672	18	105	647·5	2·49	14·55
„ 4 „ 5 „ -	6,941	3,493	28	86	503·2	4·03	12·39
„ 5 „ 10 „ -	15,785	9,229	95	285	584·7	6·02	18·05
10 years and upwards -	10,749	3,092	110	121	287·7	10·23	11·26
Total - -	100,302	76,364	448	1,470	761·3	4·38*	14·38*

* Calculated on strength, including men detached (1,935).

This table shows that the highest admission rate was amongst men in their first year of service, differing by about ten per cent. from those in their second year. The remaining rates show a steady decline up to 5 years' service, increasing among men between 5 and 10 years, and again declining.

The mortality rate was highest amongst those over 10 years' service, and the lowest in men between 3 and 4 years' service. The invaliding rate was highest in those between 5 and 10 years' service, and lowest in those over 10 years.

As compared with previous year the admission ratios show a decline among men under 1 year, 1 to 2 years, 4 to 5 years, 5 to 10 years, and 10 years and upwards. The other two periods showing an increase. The mortality rates show a decline in those under 1 year, from 3 to 4 years, 4 to 5 years, 5 to 10 years, and 10 years and upwards. An increase is seen in those from 1 to 2 years, and 2 to 3 years. The invaliding rates show a decrease among men under 1 year, and from 4 to 5 years, but an increase in the other periods.

The admissions, deaths, invalids discharged the service, and average number constantly sick in the various military districts, are shown in the following table:—

United Kingdom.

Military Districts.	Average Annual Strength.	Admissions into Hospital.	Deaths.*			Invalids discharged the Service.*	Average Number Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.
			With the Regiment	Absent from the Regiment.	Total.			Admitted into Hospital.	Died.	Invalids discharged the Service.	Constantly Sick.		
												days.	days.
1. North-eastern - -	4,909	3,349	22	1	23	57	179·56	669·9	4·60	11·40	35·92	13·15	19·62
2. North-western - -	4,741	3,362	20	—	20	41	144·80	709·1	4·22	8·65	30·54	11·18	15·76
3. Eastern - - -	5,642	5,271	12	1	13	117	278·45	934·2	2·30	20·74	49·35	18·06	19·33
4. Western - - -	6,569	4,752	48	1	49	71	280·15	723·2	7·45	10·81	42·65	15·61	21·60
5. Southern - - -	8,128	6,251	53	—	53	155	394·33	769·1	6·52	19·07	48·52	17·76	23·09
6. Thames - - -	4,000	2,856	18	—	18	41	155·36	714·0	4·50	10·25	38·84	14·21	19·90
7. South-eastern - -	7,298	6,276	16	3	19	103	347·05	860·0	2·60	14·11	47·55	17·40	20·24
8. Home - - - -	7,361	6,475	31	2	33	130	419·96	879·6	4·48	17·66	57·05	20·88	23·74
9. Woolwich - - -	6,267	5,154	33	4	37	77	273·92	820·8	5·90	12·29	43·71	16·00	19·45
10. Aldershot - - -	14,731	11,488	43	6	49	225	673·98	779·8	3·32	15·27	45·75	16·69	21·41
11. Channel Isles - -	1,680	1,355	6	—	6	33	62·98	806·5	3·57	19·60	37·48	13·71	17·01
12. North British - -	3,706	2,124	16	1	17	72	91·83	573·1	4·59	19·43	24·78	9·07	15·82
13. Belfast - - -	3,794	2,576	16	2	18	54	125·17	678·9	4·74	14·21	32·99	12·07	17·78
14. Dublin - - -	7,884	7,070	32	2	34	98	405·47	896·7	4·31	12·43	51·43	18·82	20·99
15. Cork - - - -	8,404	4,887	42	4	46	118	244·06	581·5	5·47	14·04	29·04	10·63	18·28
16. Curragh - - -	5,098	3,118	13	—	13	78	210·82	611·6	2·55	15·30	41·35	15·14	24·75
Total - - -	100,302	76,364	421	27	448	1,470	4287·89	761·3	4·38	14·38	42·75	15·64	20·55
Average of 10 years, 1882 to 1891 - - - -	934,892	756,381	5,077	397	5,474	17,388	42450·00	809·5	5·73	18·19	45·43	16·58	20·48

* Total deaths and invalids calculated on strength including men detached.

United Kingdom.

The highest rate of admission in any district was in the Eastern district, 934·2 per 1,000, followed by 896·7 in Dublin district, 879·6 in the Home district, and 860·0 in the South-eastern district. The lowest ratio was 573·1 in the North British district, next above, 581·5 in the Cork district, and 611·6 in the Curragh district. Compared with corresponding ratios in the previous year, the admission rate for the North-western, Eastern, Thames, Home, Woolwich, Channel Islands, and Dublin districts show an increase. The remaining districts show a decrease, the most marked being in Aldershot, where the decline was 110·6.

As regards mortality, the highest rate was in the Western district, 7·45 per 1,000, next the Southern with 6 52, and then Woolwich with 5·90. The lowest, 2·30, was in the Eastern district, followed by the Curragh with 2·55, and South-eastern 2·60. The rate in Dublin was 4·31, Belfast 4·74, and Cork 5·47. Compared with last year's rates the districts showing an increase were the Western, Woolwich, Channel Islands, North British, Belfast, and Cork districts, the remaining ones showing a decrease.

As regards invaliding, the three highest ratios were in the Eastern, 20·74, Channel Islands 19 60, and North British districts 19·43, and the three lowest North-western 8·65, Thames 10·25, and Western 10·81. As compared with last year an increase is observed in the North-eastern, Thames, Woolwich, Channel Islands, North British, Cork, and Curragh districts, and decrease in the remainder.

The average number constantly sick gives the highest ratios in the Home, Dublin, and Eastern Districts, 57·05, 51·43, and 49·35 respectively, and the lowest in the North British, Cork, and North-western districts, 24·78, 29·04, and 30·54 respectively. Compared with last year decrease is seen in the Southern, Aldershot, Channel Islands, North British, Belfast, and Cork districts, and increase in the remainder.

The average sick time to each soldier was longest in the Home district, being 20·88 days, followed by the Dublin district with 18·82 days, and then the Eastern district 18·06 days. The shortest sick time was in the North British district of 9·07 days, followed by Cork district 10·63, and the North-western district 11·18. Compared with previous year decrease is seen in the Southern, Aldershot, Channel Islands, North British, Belfast, and Cork districts, and increase in all the remainder. The average duration of each case of sickness was longest in the Curragh district, being 24·75 days, followed by the Home district 23·74, and the Southern 23·09 days, the shortest being the North-western 15·76, followed by the North British 15·82, and Channel Islands 17·01 days. Compared with previous year decrease has taken place in the North-western, Southern, Thames, Channel Islands, and Dublin districts, and increase in the remainder.

A table is here given showing the statistics of sickness and mortality among troops quartered in the large camps at Aldershot, Colchester, Shorncliffe, the Curragh, &c., at which the sick are treated locally, as compared with those of troops stationed in 37 large towns where the average strength of non-commissioned officers and men was over 500:—

1892.	Average Annual Strength.	Admissions.	Died.	Average constantly Sick.	Ratio per 1,000 of Mean Strength.		
					Admissions.	Deaths.	Constantly Sick.
Camps - -	25,060	19,302	82	1175·30	770·2	3·27	46·90
Towns - -	52,681	43,250	224	2388·30	821·0	4·25	45·33

It will be noticed that the admission ratio among men quartered in camps is below that of men quartered in towns by 50·8; in the previous year there was an excess of admission rate among men in camps of 25·7. The death rate is shown to be higher among men quartered in towns than among men quartered in camps, in the preceding year also this was the case. As to the ratios constantly sick in the two classes the difference between them is only 1·57, but the highest was among men in camps; as was also the case in the previous year. Comparing the ratios of sickness and mortality among troops

United Kingdom.

quartered in camps, and also of those quartered in towns with corresponding results for the year 1891 it will be observed that a decline has occurred in the former in the admission and death rates, but the constantly sick rate has increased, while in the latter the admission and constantly sick rates have increased and the death rate decreased.

The following table, compiled from the Returns of Principal Medical Officers, shows the admissions, deaths, number of men invalided, and number constantly sick, from each arm of the service, with the ratios per 1,000 of the strength, and the corresponding ratios for the previous 10 years:—

Arms of the Service.	Average Strength.	Admitted into Hospital.	Died.	Discharged as Invalids.	Average Number constantly Sick.	Annual Ratio per 1,000 of Strength.				Average of 10 Years, 1882–91.			
						Admitted.	Died.	Invalided.	Constantly Sick.	Admitted.	Died.	Invalided.	Constantly Sick.
Household Cavalry	1,259	747	—	18	36·31	593·3	—	14·30	28·84	658·5	3·74	21·64	34·44
Cavalry - -	10,938	9,214	43	190	518·20	842·4	3·93	17·37	47·38	866·6	4·88	20·32	48·86
Royal Artillery -	16,899	12,423	93	249	719·21	735·1	5·50	14·73	42·56	735·9	6·46	19·45	44·27
Royal Engineers -	4,362	2,358	20	38	129·51	540·6	4·58	8·71	29·69	584·9	7·04	13·00	32·88
Foot Guards -	5,324	5,140	28	106	364·86	965·4	5·26	19·91	68·53	943·0	6·10	22·27	61·41
Infantry - -	42,419	35,234	159	700	2009·48	830·6	3·72	16·50	47·37	881·5	5·09	18·96	49·89
Regimental Depôts	12,148	8,221	65	115	336·47	676·7	5·35	9·47	27·70	750·7	8·03	17·24	31·74
Garrison Staff and Departments.	6,953	3,027	40	54	173·85	435·3	5·75	7·77	25·00	576·6	6·58	11·80	34·89

The highest admission ratio in any arm of the service was 965·4 in the Foot Guards, the next being 842·4 in the Cavalry. In previous year the highest was in the Infantry, and next in the Foot Guards. The lowest was 435·8 in the Garrison Staff and Departments, and next 540·6 in the Royal Engineers. In previous year this was also the case.

The highest mortality rate was in the Garrison Staff and Departments, being 5·75, followed by the Royal Artillery 5·50. In previous year the highest rate was in the Royal Engineers 6·91, followed by Regimental Depôts 6·57. In the Household Cavalry there was no mortality. The lowest rate was in the Infantry, 3·72, followed by the Cavalry with 3·93. In the previous year the lowest was in Household Cavalry, 3·24, followed by Cavalry, 3·97.

Invaliding was highest in the Foot Guards, being 19·91, followed by the Cavalry 17·37. In previous year the highest rate was in the same Corps. The lowest rate was 7·77 in the Garrison Staff and Departments, followed by 8·71 in the Royal Engineers. In previous year the lowest rate was in Regimental Depôts, followed by the Royal Engineers.

The rate for constant inefficiency for sickness was highest in the Foot Guards, being 68·53, followed by 47·38 in the Cavalry. In previous year the highest also was in Foot Guards, 59·26, followed by Infantry, 48·38. The lowest rate was 25·00 in Garrison Staff and Departments, followed by Regimental Depôts, 27·70. In previous year the lowest rates were in the same arms of the service.

In Abstract XXXIX. will be found a table showing the more important of the health statistics of individual corps serving in the United Kingdom during the year.

The principal statistics of sickness and mortality amongst officers, women, and children, according to the several groups and orders of diseases, are shown in Abstract D, compiled from the Annual Returns of Principal Medical Officers of Districts.

Officers.—The average strength, was 4,008, and there were 1,509 cases of illness, and 19 deaths. The equivalent ratios per 1,000 were 376·5 for sickness and 4·74 for deaths. In the preceding year the corresponding ratios were 385·4 and 4·78 per 1,000.

United Kingdom.

General Diseases.—Diseases dependent on Morbid Poisons.—Eruptive fevers caused 25 attacks of illness, being 1 of small-pox, 13 measles, 10 scarlet fever, and 1 cow-pox. There were no deaths. *Enteric fever* caused 10 attacks of illness and 1 death. Two each in the Thames and Cork Districts, being at Chatham and Shoeburyness, and Tipperary and Waterford, and one each at York, Yarmouth, Portsmouth, Hythe, London, and Dublin.

Dysentery caused 7 attacks of illness and 1 death. *Influenza* caused 209 cases of illness, as against 221 in previous year. 1 death occurred from this cause.

The remaining attacks of illness in the first sub-group of diseases were 5 cases of mumps, and two of diphtheria.

Malarial Fevers caused 48 attacks of illness and no deaths. Of these 10 were cases of remittent fever.

Diseases of the Respiratory System caused 253 cases of illness and 1 death, the principal causes being bronchitic affections, 211.

Diseases of the Digestive System caused 235 attacks of illness and 2 deaths. The principal causes being diseases of mouth and throat, diarrhœa, and dyspepsia. The other orders of diseases call for no special remark.

Poisons caused 2 attacks of illness and 3 deaths. The 2 cases and 2 of the deaths were from mercurial and ptomaine poisoning (bad sardines), the former being a case of suicide—coroner's verdict, "Temporary insanity." The other death was from morphia, and was a case of suicide, the Coroner's verdict being "suicide while of unsound mind."

Injuries.—273 are returned and 3 deaths, the ratios being 68·1 and ·75 per 1,000 respectively. Last year the corresponding rates were 68·2 and 1·76 respectively. Of the 3 deaths, two were from gunshot wound, one being a case of "suicide while temporarily insane," and in the case of the other there was not sufficient evidence to show whether the death was due to accident or design. The remaining death was due to drowning, and was a case of suicide, the motive being returned as domestic trouble. The causes of admission were principally sprains and contusions.

WOMEN.—The average strength was 10,216, and there were 4,627 attacks of illness and 52 deaths. The ratios being 452·9 and 5·09 per 1,000 respectively. In the previous year the corresponding ratios were 437·2 and 6·16.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Eruptive fevers* caused 41 cases of illness and no deaths. They comprised 21 cases of measles, 15 of scarlet fever, and 5 of epidemic rose rash. *Enteric fever* caused 10 attacks of illness and no deaths, the cases occurred as follows: three at Aldershot, two at Devonport, two in Dublin, and one each at Sunderland, Portsmouth, Chatham.

Influenza.—396 cases are returned as against 372 in previous year; there were 2 deaths from this cause.

Debility caused 618 cases of illness and 1 death, being in ratios of 60·5 and ·10 against 58·9 and *nil* in previous year.

LOCAL DISEASES.—*Diseases of the Respiratory System* caused 730 attacks of illness and 11 deaths, being in the ratios of 71·5 and 1·08 respectively. In previous year the corresponding rates were 73·8 and 1·37 per 1,000 respectively. The large majority of cases were due to bronchitic affections, and the deaths were due, 4 to bronchitis, 3 to pneumonic phthisis, 2 to pneumonia, and 1 each to embolism and congestion of lungs.

Diseases of the Digestive System caused 1,057 cases of illness and 3 deaths, or ratios of 103·5 and ·29 per 1,000 respectively. In previous year the rates were 86·4 and ·49. The principal causes of sickness were diseases of mouth and throat and dyspepsia. The deaths were due, 2 to peritonitis and 1 to enteritis.

Diseases of Generative System caused 525 attacks of illness and 1 death, or ratios of 51·3 and 1·10 per 1,000. In previous year the rates were 53·5 and 1·08 respectively. The principal causes of sickness were functional or symptomatic diseases, and affections of pregnancy. The death was due to inflammation of uterus.

Injuries.—78 are returned and 2 deaths, as against 103 and *nil* in previous year. The most frequent causes of admissions were contusions, sprains, and wounds. The deaths were due to burn and scald, and drowning, the latter being a case of "Found drowned."

CHILDREN.—The average strength was 20,392, and there were 11,848 cases of illness and 415 deaths, being ratios of 581·0 and 20·35, as against 532·9 and 21·22 in the previous year.

United Kingdom.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Eruptive fevers.*—2,081 cases of illness and 43 deaths, the principal cause being measles 1,444, chicken-pox 281, and scarlet fever 260. *Enteric Fever* caused 21 attacks of illness, but no deaths. The cases were 6 at Devonport, 5 at Aldershot, two at Portsmouth, and two in Dublin, one each at York, Yarmouth, Weymouth, Oxford, Jersey, and Tralee.

Influenza caused 453 cases as against 435 in previous year. With the exception of Belfast all the districts were more or less affected. *Diphtheria* caused 14 cases of illness and 6 deaths, as against 25 cases and 10 deaths in previous year. The cases occurred—4 at Gravesend, 3 at Aldershot, 2 each at Woolwich and Shoeburyness, and one each at Perth, Edinburgh, and Galway.

Venereal Affections caused 29 attacks of illness for inherited syphilis, and 4 deaths, as against 22 cases and 6 deaths in previous year. *Developmental Diseases*—debility, immaturity at birth, &c.—caused 454 cases of sickness and 43 deaths, against 413 and 57 in the previous year.

Local Diseases.—Diseases of the Nervous System caused 270 attacks of illness and 72 deaths, or ratios of 13·2 and 3·53, against 12·5 and 4·15 respectively in previous year. A large majority of the cases were convulsions. The deaths were due—53 to convulsions, 13 inflammation of brain and membranes, 4 hydrocephalus, and 2 laryngismus stridulus.

Diseases of the Respiratory System caused 3,151 cases of illness and 120 deaths, against 3,303 and 138 in previous year. Of the total cases 2,916 were due to bronchitic affections and 147 to pneumonia. The deaths were 87 bronchitis, 22 pneumonia, 5 croup, 3 laryngitis, 1 empyema, 1 hæmoptysis, and 1 pneumonic phthisis.

Diseases of the Digestive System caused 2,369 attacks of illness and 54 deaths, or ratios of 116·2 and 2·65, as against 85·5 and 2·41 in previous year. The principal causes of sickness were affections of the mouth and throat, diarrhœa, and dyspepsia. The deaths were 22 diarrhœa, 16 teething, 4 enteritis, 4 peritonitis, 3 jaundice, 1 atelectasis, 1 ulceration of fauces, 1 sore throat, 1 dyspepsia, and 1 hypertrophy of liver.

Injuries.—460 are recorded and 13 deaths, or ratios of 22·5 and ·64 respectively. The most frequent injuries were wounds, contusions, and burns and scalds. The deaths were due to overlying 8, and one each from drowning, sunstroke, burn, contusion, and wound.

VACCINATION.

In the subjoined table will be found the conditions as to vaccination of all recruits found on inspection fit for the service, during the year, together with the proportion per 1,000 of each condition.

1892.	Number of Recruits found on inspection fit for the Service.	Proportion per 1,000.
Had marks of vaccination - -	41,393	967·0
Had marks of small-pox - -	248	5·8
Had neither marks of vaccination nor of small-pox - - -	1,165	27·2
Total - -	42,806	1000·0

Compared with the corresponding results in the preceding year, an increase of 2·6 per 1,000 is observed amongst recruits bearing marks of vaccination, a decrease of 2·1 amongst those bearing marks of small-pox, and a slight decrease, ·5, among those bearing neither marks of vaccination nor small-pox.

The following tables, compiled from the annual returns of Principal Medical Officers, show the number of vaccinations performed during the year with the proportions per 1,000 of successful or modified results or of failures, whether vaccinated with fresh or preserved lymph.

United Kingdom.

Results.	Vaccinated during the Year.						Proportion per 1,000.					
	Arm to Arm.		From Preserved Lymph.		Total.		Arm to Arm.		From Preserved Lymph.		Total.	
	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.	Primary Vaccination.	Re-Vaccination.
TABLE I.—*Recruits.*												
Perfect vaccine pustules	191	960	329	25,595	520	26,555	728·8	703·8	818·4	734·0	805·0	732·9
Modified vaccine pustules	33	226	61	6,270	94	6,496	135·2	165·7	151·7	179·8	145·5	179·3
Failures	20	178	12	3,004	32	3,182	82·0	130·5	29·9	86·2	49·5	87·8
Total	244	1,364	402	34,869	646	36,233	1000·0	1000·0	1000·0	1000·0	1000·0	1000·0
TABLE II.—*Soldiers other than Recruits.*												
Perfect vaccine pustules	2	36	6	796	8	832	1000·0	433·7	500·0	500·0	571·4	496·7
Modified vaccine pustules	—	38	5	491	5	529	—	457·9	416·7	308·4	357·2	315·8
Failures	—	9	1	305	1	314	—	108·4	83·3	191·6	71·4	187·5
Total	2	83	12	1,592	14	1,675	1000·0	1000·0	1000·0	1000·0	1000·0	1000·0
TABLE III.—*Soldiers and Recruits.*												
Perfect vaccine pustules	193	996	335	26,391	528	27,387	784·6	688·3	809·2	723·8	800·0	722·5
Modified vaccine pustules	33	264	66	6,761	99	7,025	134·1	182·5	159·4	185·4	150·0	185·3
Failures	20	187	13	3,309	33	3,496	81·3	129·2	31·4	90·8	50·0	92·2
Total	246	1,447	414	36,461	660	37,908	1000·0	1000·0	1000·0	1000·0	1000·0	1000·0

United Kingdom.

The total number of operations for vaccination during the year was 38,568, which is greater than in the preceding year by 2,890. The number of recruits vaccinated was 36,879, which shows an increase of 4,178, but the number of soldiers other than recruits who were vaccinated was 1,689, less than in 1891 by 1,288.

The number of recruits found on inspection fit for service during the year was 42,806; therefore, the recruits vaccinated being 36,879, there were 5,927 unaccounted for. This is probably due to the fact that some recruits joined from the Militia, in which force they had already been vaccinated; some recruits joined too late in the year for their vaccination to appear in the yearly returns, and in some cases men deserted after enlistment before there had been time to vaccinate them.

In comparing the vaccination of recruits with the previous year, it is shown in the primary arm-to-arm vaccination that there was an increase of 55·5 per 1,000 in the proportion of perfect vaccine pustules, and of 135·2 in that of the modified vaccine pustules, and a decrease of 190·7 in that of failures. In arm-to-arm re-vaccination there was an increase of 25·5 in the proportion of perfect results, and of 13·5 in modified results, with a decrease of 39·0 in failures.

The results of vaccination with preserved lymph are very satisfactory, an increase of 3·3 in perfect pustules, of 34·7 in modified pustules, and a decrease of 38·0 in failures amongst the primary vaccinations. In the re-vaccinations an increase of 31·8 in perfect pustules, a decrease of 3·8 in modified pustules, and of 28·0 in failures. The total results of primary vaccination among recruits show a decrease of 3·4 per 1,000 in the proportion of perfect vaccine pustules, an increase of 37·5 in that of modified results, and a decrease of 34·1 in that of failures. The total results of re-vaccination among recruits give an increase 32·2 per 1,000 in the proportion of perfect vaccine pustules, and a decrease of 2·3 and 29·9 in modified vaccine vesicles, and failures respectively.

In the next table is given the vaccination of soldiers, other than recruits. there were only 2 cases of primary vaccination, and 83 of re-vaccination from arm-to-arm, and 12 primary and 1,592 re-vaccinations from preserved lymph.

Taking all classes of soldiers together, it is observed from Table III. that, as compared with the return for 1891, in primary vaccination there is an increase of 9·9 per 1,000 in the proportion of perfect vaccine pustules, and of 32·7 in modified pustules, and a decrease of 42·6 in failures. In re-vaccination there is an increase of 40·3 in the proportion of perfect results, a decrease of 4·0 in modified results, and a decrease also of 36·3 in failures.

Of the total number of operations of vaccination of soldiers, 38,568, there were 27,915 perfect results, or 723·8 per 1,000, 7,124 modified results, or 184·7 per 1,000, and 3,529 failures, or 91·5 per 1,000. Comparing these results with the corresponding proportions in the previous year, an increase of 40·7 is found in the proportion of perfect results, a decrease of 4·0 in modified results, and a decrease also of 36·7 in failures.

Women.—The number of vaccination operations among women was 148; of these 17 were cases of primary vaccination, and 131 cases of re-vaccination; of the latter 80 cases, or 610·7, gave perfect results, 40 cases, or 305·3, gave modified results, and 11 cases, or 84·0 were failures. This shows, as compared with the previous year, a decrease of 185·9 per 1,000 in perfect results, an increase of 150·5 in modified results, and an increase also of 36·4 in failures.

Children.—Among children there were 377 primary arm-to-arm vaccinations, of which 359, or 952·3 per 1,000, gave perfect results, and 18, or 47·7 per 1,000, were failures. The proportion of successful results is higher by 13·6 than in the previous year. Out of 2,484 cases of primary vaccination with preserved lymph 121 were failures. the proportion of successes being 951·3, and of failures 48·7. The proportion of successes is 26·7 higher than the previous year.

Re-vaccination with preserved lymph gave 107 successes out of 112 cases; the proportion of perfect results 955·4 per 1,000, showing a decrease of 22·4. The total number of primary vaccinations was 2,861, of which 139 were failures, the proportion of successful results being thus 951·4 per 1,000, an increase of 24·1 over last year. There were 121 re-vaccinations, of which 115 were successful, a proportion of 950·4, a decrease of 29·6 compared with the

United Kingdom.

previous year. The total number vaccinated was 2,982, and 2,837, or 951·4 per 1,000, were successful, showing an increase of 23·3 over previous year.

Small-pox.—During the year in the United Kingdom 6 men were attacked with small-pox, but no case occurred among the women or children, and no death occurred. No admissions or deaths took place in the colonies either among men, women, or children. In India there were 18 attacks and 3 deaths among the men, 9 attacks and 1 death among the women, and 2 attacks and one death among the children. In Egypt, 2 men and 2 women were attacked, but there were no deaths. There were no admissions or deaths among the troops on board ship. The total numbers are, therefore, 26 attacks and 3 deaths among the men, 11 attacks and 1 death among the women, and 2 cases and 1 death among the children.

The ratios of attacks to strength are for men ·13, for women ·74, and for children ·07 per 1,000; and the ratios of mortality are for men ·01, for women ·06, and for children ·03 per 1,000. In the preceding year the ratios of prevalence among men and women were ·11 and ·27 respectively, and the ratio of mortality for men ·01 per 1,000.

ON THE RECRUITING OF THE ARMY.

It is shown by the Annual Returns of Principal Medical Officers, that the number of recruits inspected during the year was 68,761; of these, 26,349 were rejected as unfit, equal to a ratio, per 1,000, of 383·19. The remaining 42,412, or 616·81 per 1,000, were found fit for the service.

The subjoined table shows the number inspected, the number rejected, and the ratios of rejections per 1,000 examined:—

TABLE I.

Number of Recruits Inspected.	Number Rejected.			Ratio of Rejections per 1,000 inspected.		
	On Inspection.	Unfit within Three Months of Enlistment.	Total.	On Inspection.	Unfit within Three Months of Enlistment.	Total.
68,761	25,955	394	26,349	377·46	5·73	383·19

It will be observed that of the total number found unfit, 394 men, after having passed at first, were found to have become unfit, or not likely to become efficient soldiers, within three months of enlistment.

These recruits were forthwith discharged under the provisions of para. 124 L. (*d.*) Section XIX., Queen's Regulations and Orders for the Army, as all recruits pass through a period of probationary training before being finally accepted. Excluding these the number of men rejected on inspection was 25,955, or 377·46 per 1,000.

Compared with the corresponding ratios of the previous year an increase of 3·86 per 1,000 is seen in the ratio of rejection on inspection, and of ·50 in that of those rejected after three months. The total ratio of rejection has, therefore, increased by 4·36, the ratio of men found fit having decreased by the same amount.

The native countries of recruits, the ratios of rejection, and the proportion per 1,000 furnished by each country are given in the following table:—

United Kingdom.

TABLE II.

Native Countries of Recruits.	Number Inspected.	Number Rejected.	Ratio Rejected per 1,000 Inspected.	Proportion per 1,000 Recruits furnished by each Country.
England and Wales - - -	53,411	20,602	384·84	777
Scotland - - - - -	5,830	2,053	352·14	85
Ireland - - - - - -	8,688	3,391	390·31	126
British Colonies and Foreign Countries - - - - -	832	303	364·18	12
Total - - -	68,761	26,349	383·19	1,000

Compared with the similar table in the report for the previous year, the ratio of rejection of recruits born in England and Wales has decreased by ·27, in that of recruits born in Scotland an increase of 11·61 is found, and an increase also of 20·92 and 46·64 in the ratios of those born in Ireland and the Colonies or foreign countries respectively.

Of 1,000 recruits inspected 777 were natives of England or Wales, being 13 less than in the previous year, 85 were natives of Scotland, being 3 more than last year, 126 were natives of Ireland, or 10 more than last year, and in those born in the Colonies or foreign countries the number, 12, is exactly similar to previous year.

In the succeeding table the number of recruits for each arm of the service is shown as far as possible, also the number rejected, the ratios of rejection and the proportion per 1,000 for each arm of the service inspected.

As the particular arm is not stated in some of the returns a number of men are shown as enlisted for General Service.

Compared with the return for 1891, the ratio for rejection in the Household Cavalry has decreased by 9·08 and that for General Service by 5·54, but an increase of 11·35 in Cavalry, 14·39 in Artillery, 15·58 in Engineers, 17·87 in Foot Guards, 2·73 in Infantry, and 19·91 in Departmental Corps has occurred. The proportion of recruits for each arm of the service per 1,000 inspected as compared with 1891 shows no change in the Household Cavalry and Infantry, but an increase of 3 each in Cavalry and Foot Guards, of 2 each in Engineers and General Service, and a decrease of 7 in Artillery and 3 in Departmental Corps.

TABLE III.

Arms of the Service.	Number Inspected.	Number Rejected.	Ratio of Rejections per 1,000 of Recruits Inspected for each Arm of the Service.	Proportion for each Arm of the Service per 1,000 Inspected.
Household Cavalry - - -	398	150	376·88	6
Cavalry of the Line - - -	5,034	1,958	388·95	73
Royal Artillery - - -	7,799	3,060	392·36	113
Royal Engineers - - -	1,521	582	382·64	22
Foot Guards - - - -	2,656	986	371·23	39
Infantry Regiments - - -	38,535	14,979	388·71	560
Departmental Corps - - -	1,550	633	408·38	23
General Service - - -	11,268	4,001	355·08	164
Total - - -	68,761	26,349	383·19	1,000

United Kingdom.

In Table IV. are shown the occupations of recruits previous to enlistment, the ratio rejected per 1,000 of each group of occupations, and the proportion of each group in every 1,000 men inspected :—

TABLE IV.

Occupations of Recruits.	Number inspected.	Number rejected.	Ratio rejected per 1,000 inspected.	Proportion of each Group in 1,000 Recruits inspected.
1. Labourers, Servants, Husbandmen, &c.	45,188	17,243	381·58	657
2. Manufacturing Artizans (as Clothworkers, Weavers, Lace Makers, &c.).	9,667	4,092	423·29	141
3. Mechanics employed in Occupations favourable to physical development (as Smiths, Carpenters, Masons, &c.).	7,483	2,713	362·56	109
4. Shopmen and Clerks - -	3,990	1,746	437·59	58
5. Professional Occupations, Students, &c.	680	223	327·94	10
6. Boys - - - - -	1,753	332	189·39	25
Total - - -	68,761	26,349	383·19	1,000

Compared with the previous year it is seen that there is an increase of 1·44 per 1,000 in the ratio of rejection of Class I., and of 12·79 in Class II., of 67·96 in Class IV., and of 1·47 in Class VI., whilst a decrease is shown of 15·08 in Class III., and of 41·31 in Class V.

The proportions of the different classes of occupations among 1,000 recruits inspected, compared with the returns for 1891, show an increase of 17 in Class I., and of 1 each in Classes III. and IV., whilst there is a decrease of 17 in Class II., and of 2 in Class VI. Class V. remains the same.

The following table gives the number of recruits rejected on inspection during the year according to the different causes of rejection arranged in classes, and the ratio per 1,000 of rejection in each class. Similar information is afforded regarding recruits unfit within three months of enlistment :—

TABLE V.

Causes of Rejections in Classes.	Total inspected, 68,761.			
	Number rejected on Inspection.	Ratio per 1,000 rejected on Inspection.	Unfit within Three Months of Enlistment.	Ratio per 1,000 rejected as Unfit within Three Months of Enlistment.
1. Syphilis - - - - -	317	4·61	1	·01
2. Scrofula - - - - -	211	3·07	1	·01
3. Tubercle - - - - -	36	·52	11	·16
4. Impaired Constitution and Debility.	679	9·87	25	·37
5. Other General Diseases - -	211	3·07	10	·15
6. Diseases of Nervous System -	55	·80	37	·54

United Kingdom.

Causes of Rejections, in Classes.	Total inspected, 68,761.			
	Number rejected on Inspection.	Ratio per 1,000 rejected on Inspection.	Unfit within Three Months of Enlistment.	Ratio per 1,000 rejected as Unfit within Three Months of Enlistment.
7. Weakness of Intellect	123	1·79	65	·95
8. Defective Vision	2,912	42·35	9	·13
9. Diseases of Eyes and Eyelids	118	1·71	6	·09
10. Diseases of Nose and Mouth	48	·70	—	—
11. Disease of Ears	171	2·48	8	·12
12. Deafness	83	1·21	7	·10
13. Impediment of Speech	94	1·37	1	·01
14. Disease of Heart	954	13·87	38	·55
15. Disease of Arteries (Aneurysm)	1	·01	—	—
16. Disease of Veins (Varix)	1,117	16·24	5	·07
17. Disease of Lungs (except Tubercle).	117	1·70	8	·12
18. Loss or Decay of many Teeth	1,001	14·56	5	·07
19. Hernia	516	7·50	30	·44
20. Laxity of Abdominal Rings	140	2·04	3	·04
21. Hæmorrhoids	85	1·24	—	—
22. Diseases of the Urinary Organs	35	·51	11	·16
23. Varicocele	815	11·85	7	·10
24. Other Diseases of the Genital Organs (not Syphilitic).	92	1·34	2	·03
25. Defects of Upper Extremities, from Fracture, Contraction, Luxation, &c.	434	6·31	14	·20
26. Defects of Lower Extremities, from Fracture, Contraction, Luxation, &c.	1,175	17·09	28	·41
27. Flat Feet	676	9·83	16	·23
28. Diseases of Joints	127	1·85	4	·06
29. Other Affections of Bones and Muscles.	108	1·57	7	·10
30. Ulcers, Wounds, and Cicatrices	136	1·98	4	·06
31. Other Affections of the Cutaneous System.	274	3·98	2	·03
32. Malformation of Ears	6	·09	—	—
33. Malformation of Nose and Mouth	15	·22	—	—
34. Malformation of Chest and Spine	514	7·47	9	·13
35. Malformation of Urinary or Genital Organs.	40	·58	—	—
36. Under Height	2,249	32·71	1	·01
37. Under Chest Measurement	6,594	95·90	8	·12
38. Under Weight	1,899	27·62	3	·04
39. Apparent Age not in accordance with Regulations.	761	11·07	—	—
40. Not likely to become efficient	990	14·40	8	·12
41. Over height	26	·38	—	—
Total rejected	25,955	377·46	394	5·73

United Kingdom.

Defective development, that is those under the standard for height, chest measurement, and weight, caused a large number of rejections, the ratio being 156·23 per 1,000, or an increase of 3·97 on the return for the previous year. Defective chest measurement caused the highest ratio of rejections, being 95·90 per 1,000, an increase of 2·87 over previous year. Under height gave a ratio of 32·71, or an increase of 5·95 over the previous year. Under weight comes next with a ratio of 27·62, or a decrease of 4·85 as compared with 1891.

Amongst other causes of rejection the most frequent was, as usual, defective vision, which gave a ratio of 42·35 per 1,000, being higher than the previous year by 2·00. Next in order come defects of lower extremities with a ratio of 17·09, diseases of veins 16·24, diseases of heart 13·87, and impaired constitution 9·87.

Amongst those recruits found unfit within three months of enlistment, the chief causes of rejection were weakness of intellect 65 cases, heart disease 38 cases, nervous diseases 37 cases, hernia 30 cases, and defects of lower extremities 28 cases.

Ages, Heights, Weights, and Chest Measurements of all Recruits finally approved for Service during the Year.

In the following table are shown the ages of all recruits finally approved for service, and the proportion of each age per 10,000:—

TABLE VI.

Ages.	Numbers finally approved for Service.	Proportion per 10,000.
Boys under 17 years - - - -	1,421	335
From 17 to 18 „ - - - -	576	136
„ 18 to 19 „ - - - -	18,826	4,439
„ 19 to 20 „ - - - -	8,179	1,929
„ 20 to 21 „ - - - -	4,427	1,044
„ 21 to 22 „ - - - -	3,068	723
„ 22 to 23 „ - - - -	2,339	551
„ 23 to 24 „ - - - -	1,681	396
„ 24 to 25 „ - - - -	1,476	348
25 years and upwards - - -	419	99
Total - - -	42,412	10,000

The greatest number of recruits passed fit for the service was between 18 and 19 years of age. The total number being 18,826, or at the ratio of 4,439 per 10,000. nearly one-half the entire number enlisted at all ages. This is a decrease in the ratio of 312 as compared with 1891. The next proportions, 1,929 between 19 and 20 years, and 1,044 between 20 and 21 are slightly above the proportions for the previous year.

United Kingdom.

The next table gives the heights of recruits finally approved, and the proportion of each height per 10,000. It also gives the heights of recruits finally approved, arranged in series according to age, together with the proportion per 10,000 of each height at each age:—

TABLE VII.

Heights of Recruits finally approved for Service.	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	Total at each Height.
ft. in. ft. in. Under 5 3 -	1,215	31	195	44	15	3	9	6	4	—	1,522
5 3 to 5 4 -	83	134	2,565	754	206	137	90	65	55	14	4,103
5 4 to 5 5 -	43	149	4,703	1,569	804	477	340	225	161	41	8,512
5 5 to 5 6 -	37	124	4,399	1,607	862	582	442	298	230	61	8,642
5 6 to 5 7 -	19	57	2,834	1,415	798	549	443	338	299	83	6,835
5 7 to 5 8 -	6	46	1,959	1,181	680	482	397	246	312	70	5,379
5 8 to 5 9 -	10	20	1,237	787	494	348	288	224	164	72	3,644
5 9 to 5 10 -	7	10	584	490	290	224	162	144	139	33	2,083
5 10 to 5 11 -	1	1	189	178	159	118	92	74	62	20	894
5 11 to 6 0 -	—	1	107	80	77	89	44	38	28	16	480
6 0 and upwards	—	3	54	74	42	59	32	23	22	9	318
Totals at each age	1,421	576	18,826	8,179	4,427	3,068	2,339	1,681	1,476	419	42,412

Heights of Recruits finally approved for Service.	Proportions per 10,000 at each Age.										Total Proportion of each Height per 10,000.
	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	
ft. in. ft. in. Under 5 3 -	8,551	538	103	54	34	10	38	36	27	—	359
5 3 to 5 4 -	584	2,326	1,363	922	465	447	385	387	372	334	967
5 4 to 5 5 -	303	2,587	2,498	1,918	1,816	1,555	1,454	1,338	1,091	979	2,007
5 5 to 5 6 -	260	2,153	2,337	1,965	1,947	1,897	1,890	1,773	1,558	1,456	2,038
5 6 to 5 7 -	134	990	1,505	1,730	1,803	1,789	1,894	2,011	2,026	1,981	1,612
5 7 to 5 8 -	42	799	1,041	1,444	1,536	1,571	1,697	1,463	2,114	1,671	1,268
5 8 to 5 9 -	70	347	657	962	1,116	1,134	1,231	1,333	1,111	1,718	859
5 9 to 5 10 -	49	174	310	599	655	730	693	856	942	787	491
5 10 to 5 11 -	7	17	100	218	359	385	393	440	420	477	211
5 11 to 6 0 -	—	17	57	98	174	290	188	226	190	382	113
6 0 and upwards	—	52	29	90	95	192	137	137	149	215	75
Total -	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

The proportion of recruits under 5 feet 3 inches in height per 10,000 approved has decreased by 34, as compared with 1891, that of 5 feet 3 inches to 5 feet 4 inches by 130, 5 feet 4 inches to 5 feet 5 inches by 70, and 5 feet

United Kingdom.

5 inches to 5 feet 6 inches by 33. On the other hand, an increase is shown of 18 in 5 feet 6 inches to 5 feet 7 inches, of 57 in 5 feet 7 inches to 5 feet 8 inches, of 86 in 5 feet 8 inches to 5 feet 9 inches, of 60 in 5 feet 9 inches to 5 feet 10 inches, of 19 in 5 feet 10 inches to 5 feet 11 inches, of 10 in those of 5 feet 11 inches to 6 feet high, and of 17 of those over 6 feet.

Omitting boys the highest proportion of recruits at any age of any height per 10,000 finally approved was 2,587 between 17 and 18 years, and 5 feet 4 inches to 5 feet 5 inches in height. In 1891 the highest proportion was at the same age and at the same height.

The next table shows the weights of the recruits who were finally approved, and the proportion of each weight per 10,000. It also shows the weights of these recruits arranged in series according to age, together with the proportion per 10,000 of each weight at each age :—

TABLE VIII.

Weights of Recruits finally approved for Service.	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	Total at each Weight.
Under 100 lbs. -	1,142	9	1	—	—	—	—	—	—	—	1,152
100—110 lbs. -	184	78	509	102	18	8	5	1	—	1	906
110—120 „ -	65	246	6,559	1,583	611	292	168	117	88	23	9,752
120—130 „ -	23	165	7,440	2,940	1,471	908	593	421	290	68	14,319
130—140 „ -	7	55	3,038	2,192	1,266	897	763	521	420	119	9,278
140—150 „ -	—	20	978	964	701	564	487	351	365	117	4,547
150—160 „ -	—	—	243	260	274	253	213	173	200	57	1,673
160—170 „ -	—	2	47	117	72	109	79	72	81	24	603
Upwards of 170 lbs.	—	1	11	21	14	37	31	25	32	10	182
Totals at each age	1,421	576	18,826	8,179	4,427	3,068	2,339	1,681	1,476	419	42,412

Weights of Recruits finally approved for Service.	Proportions per 10,000 at each Age.										Total Proportion of each Weight per 10,000.
	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	
Under 100 lbs. -	8,037	156	—	--	—	—	—	—	—	—	272
100—110 lbs. -	1,295	1,354	270	125	41	26	21	6	—	24	214
110—120 „ -	457	4,271	3,484	1,935	1,380	952	718	696	596	549	2,299
120—130 „ -	162	2,865	3,952	3,595	3,323	2,960	2,535	2,504	1,965	1,623	3,376
130—140 „ -	49	955	1,614	2,680	2,860	2,924	3,262	3,100	2,845	2,840	2,188
140—150 „ -	—	347	520	1,179	1,583	1,833	2,082	2,088	2,473	2,792	1,072
150—160 „ -	—	—	129	318	619	825	911	1,029	1,355	1,360	394
160—170 „ -	—	35	25	143	163	355	338	428	549	573	142
Upwards of 170 lbs.	—	17	6	25	31	120	133	149	217	239	43
Totals at each age	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

United Kingdom.

As compared with the previous year a decrease has occurred of 30 in the proportion of recruits under 100 and 110 lbs. in weight per 10,000 finally approved, of 196 in those between 110 and 120 lbs. weight, and of 259 in those between 120 and 130 lbs. weight. A general increase has occurred in the proportion of those recruits from 130 lbs. to 170 lbs. and upwards in weight.

Omitting boys, the highest proportion of recruits at any age and of any weight was 4,271 among recruits of between 17 and 18 years of age, and 110 to 120 lbs. weight, the next being 3,952 among those of from 18 to 19 years, and 120 to 130 lbs. weight. In 1891 the highest proportions, 4,224 and 3,715 respectively, were amongst recruits at the same ages and weights.

In the next table is shown the chest measurements of recruits finally approved, and the proportion of each measurement per 10,000. It also shows the chest measurements of these recruits arranged in series according to age, together with the proportion per 10,000 of each chest measurement at each age.

TABLE IX.

Chest Measurement of Recruits finally approved for Service.	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	Total at each Chest Measurement.
Under 31 inches -	1,201	26	44	4	2	—	—	—	—	—	1,277
31—32 inches -	131	90	614	81	23	8	5	2	2	—	956
32—33 „ -	54	195	3,634	943	379	183	99	33	27	10	5,557
33—34 „ -	24	172	7,527	2,512	1,148	727	481	303	210	63	13,167
34—35 „ -	9	67	5,029	2,826	1,560	1,082	816	547	508	129	12,575
Above 35 inches -	2	26	1,978	1,813	1,315	1,068	936	796	729	217	8,880
Totals at each age	1,421	576	18,826	8,179	4,427	3,068	2,339	1,681	1,476	419	42,412

Chest Measurement of Recruits finally approved for Service.	Proportions per 10,000 at each Age.										Total proportion of each Chest Measurement per 10,000.
	Boys under 17 Years.	Between 17 and 18.	Between 18 and 19.	Between 19 and 20.	Between 20 and 21.	Between 21 and 22.	Between 22 and 23.	Between 23 and 24.	Between 24 and 25.	25 Years and upwards.	
Under 31 inches -	8,452	451	23	5	5	—	—	—	—	—	301
31—32 inches -	922	1,563	326	99	52	26	21	12	13	—	225
32—33 „ -	380	3,386	1,931	1,153	856	596	423	196	183	238	1,310
33—34 „ -	169	2,986	3,998	3,071	2,593	2,370	2,057	1,803	1,423	1,504	3,105
34—35 „ -	63	1,163	2,671	3,455	3,524	3,527	3,497	3,234	3,442	3,079	2,965
Above 35 inches -	14	451	1,051	2,217	2,970	3,481	4,002	4,735	4,939	5,179	2,094
Total -	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

As compared with the preceding year a decrease of 34 is shown in the proportion of recruits under 31 inches, of 65 in those from 31 to 32 inches, of 201 in those from 32 to 33, and of 253 in those of 33 to 34 inches, whilst an increase of 195 is found in those from 34 to 35 inches, and of 358 in those over 35 inches.

Omitting boys, the highest proportion of recruits at any age and of any chest measurement was 5,179 amongst men of 25 years and upwards and above 35 inches chest measurement. In previous years the highest proportions are also found at these ages; but they are, however, dependent on comparatively few inspections. Taking the age at which the greatest number of recruits are examined, it is found that the highest proportion per 10,000 was 3,998 between 33 and 34 inches chest measurement as compared with 4,112 at the same age and measurement in 1891.

From these tables it is calculated that, excluding boys under 17 years of age, the average age of recruits finally approved during the year was 19·3 as compared with 19·2 in 1891. The average height was 5 feet 5·7 inches as compared with 5 feet 5·6, the average weight being 123·8 lbs. as compared with 122·3 lbs., and the average chest measurement was 33·5 inches as compared with 33·4 inches in the previous year.

The next table shows the state of education of recruits finally approved, together with the proportion per 1,000 of those well educated, able to read and write, able to read only, or unable to read.

Table X.

—	Numbers finally approved.	Proportion per 1,000.
Well educated - - - - -	2,827	66
Able to read and write - - -	37,273	879
Able to read only - - - -	590	14
Unable to read - - - - -	1,722	41
Total - - - -	42,412	1,000

Compared with the results for the previous year, an increase of 7 in the proportion per 1,000 is noted in well-educated recruits, and of 7 in those unable to read, whilst a decrease of 6 is found in those able to read and write, and of 8 in those able to read only.

HOME STATIONS.

SANITARY CONDITIONS.

North-eastern District.

United Kingdom.

The Principal Medical Officer, Surgeon-Colonel J. Y. Donaldson, M.D., in his report shows that the general health of the troops and sanitary condition of the barracks was, on the whole, satisfactory. He takes exception to the quality and warmth-giving powers of the brown blankets, as issued to troops, and recommends that some method of supplying warm water to the ablution rooms in winter should be attempted. The recesses for night urinals opening into barrack-room have been closed throughout the district, and have been replaced by urine tubs in the passages. At Newcastle-on-Tyne the warming and ventilation of the garrison cells have been much improved. The stone paving-blocks behind the Artillery blocks have become unserviceable, and the ground offensive; this will be remedied in 1893. Sunderland.—The drainage is out of order, but is to be immediately put in repair. Beverley.—The dry-earth system hitherto in use has been replaced by a system of drains. The Principal Medical Officer is doubtful if the change will be beneficial.

York.—Drain ventilators have been erected at officers' quarters. The surface drainage requires improvement.

Strensall.—The water supply is indifferent, requiring the use of filters in the barrack-rooms. Sheffield.—The large underground water tanks have been emptied and thoroughly cleaned out. Lincoln.—An addition to the married quarters is being made, and the drainage from all those buildings taken up and re-constructed. The hospital drainage is out of order, and a report made on the subject. Leeds.—The old barracks are undergoing reconstruction. Bradford.—The authorities have not yet decided what is to be done with the old barracks; they are in a dilapidated state, and it is difficult to keep them in good sanitary condition.

North-western District.

The Principal Medical Officer, Surgeon-Colonel A. A. Gore, M.D., reports that the general health of the troops has been good, and the sanitary condition satisfactory. Full precautions were taken in anticipation of an outbreak of cholera, and the port authorities at Liverpool were also fully prepared to cope with such an outbreak. At Coventry, Hulme, Salford, and Preston the condition of the barracks, owing to age, faulty construction, and local surroundings is not so good as in other parts of the district.

At Ashton-under-Lyne the guard-room and armourer's shop have been fitted with new ventilators. At Bury the men's washhouse has been enlarged, and a new cistern provided for officers' mess. At Chester a new quarter for a warrant officer has been built, and improvements made in the ventilation of the cells. At Coventry the yard of the hospital has been paved with bricks, and the floors of the latrines repaired. Fleetwood.—Drains overhauled and cleaned, and two new shelter sheds erected on the ranges. Lichfield.—A modified gymnasium has been erected, and Dean's cookers placed in men's kitchens. Hulme.—Hot water has been laid on to the baths, and the flags and pavement behind the stables and left wing of hospital are being re-set. Salford.—It is proposed to reappropriate the rooms in barracks no longer required for recruiting purposes, and thus gain increased accommodation. Preston.—The floors of the infantry blocks are being concreted. Warwick.—The infants' school has been enlarged. Worcester.—The parade ground has been repaired, and the drainage of the officers' quarters and barracks generally improved. Wrexham.—The drains from the officers' quarters have been properly trapped and disconnected from the mains. At Burscough a small isolation ward has been provided, the drainage improved and a site selected for the erection of new quarters.

During the drill season encampments were formed at Beaumaris, Carnarvon, Wareham, Stafford, Stoneleigh, Warwick, St. Ann's, Lowther Park, Altcar, Chipping, and Morecambe. They were all found to be in a good sanitary condition, with a wholesome water supply. Latrine trenches and field kitchens were used. The general health of the troops under canvas was excellent.

Eastern District.

The Principal Medical Officer, Surgeon-Colonel C. H. Giraud, reports that the health of the troops in the district during the year had been most satisfactory. A large number of cases of influenza occurred at Warley, the disease being imported, no doubt, from the east end of London, a large amount of traffic being carried on between the two places. No disease has occurred that could be attributed to any local sanitary defects. No alterations have been made in the cooking, diet, or clothing of the troops. The gymnasia at Colchester and Warley continue to exercise a beneficial effect upon the health of the men.

The following sanitary improvements have been effected during the year:—Colchester Camp.—The surface drainage channels have been relaid and defective drainage improved. Cavalry and artillery barracks, a 300 gallon flushing tank has been erected at the head of the main drain.

Warley.—Reconstruction of drainage has been completed.

Great Yarmouth.—The defective drainage at South Denes Barracks has been improved.

Harwich.—The town water supply has been laid on to the Redoubt.

In addition to the foregoing, minor improvements and all repairs have been executed from time to time as found necessary.

As regards the sanitary condition of the neighbourhood of the barracks at Bedford, no change has been made in the system at Kempston, the removal of refuse and filth by carts is now carried out, and there is little prospect of the making of underground sewers for many years on the score of expense.

At the Station Hospital, Colchester, the drains from women's washhouses have been cut off from the main drain. The waterclosets have been improved and ventilated, and the surface channels cleaned out. At Weedon the dry-earth system is in use except in the hospital and officers' quarters, and works very satisfactorily.

Western District.

Surgeon-Colonel F. H. Welch, the Principal Medical Officer, states that in the reports from this district ascribed causes of the recorded diseases are few. Zymotic disease is generally ascribed to the surrounding civil community. Climatic variations and a wet, cold winter account for the prevalence of respiratory affections and rheumatism. The existence of " local insanitary conditions " at the Barracks in Plymouth is regarded as a possible explanation of the enteric fever cases received from them by the Medical Officer in charge of the Station Hospital, Devonport. Excluding these, but little, if any, disease can be traced to defects in barracks of a remediable nature.

At Devonport new married quarters are in course of completion. New latrines constructed in Raglan Barracks. A sergeant-major's quarter is being built at the Station Hospital. New drainage works are in progress in the Citadel and at Millbay Barracks, also many minor repairs. The hospitals generally are in fair working order. At Exeter it was found necessary to take

United Kingdom.

over a barrack room owing to the limited accommodation of the Station Hospital.

At Brecon the gas escape pipes have been raised, and an offensive smell which existed thus got rid of.

At Bull Point metal bins have been substituted for the open ash pits formerly in use. The temporary wooden sheds at the rear of the Barracks were very offensive from pigs and other animals being kept in them; they have now been removed. A better supply of drinking water, by pipes from Crown Hill to Forts Agaton and Eversteth, has been arranged and completed. At Newport the large underground tanks (which are not used) were emptied and cleaned out, and the overflow pipes properly trapped. At Pembroke Dock the guard room ventilation was improved and the cells enlarged.

At Taunton the number of outside latrines has been increased.

Southern District.

The Principal Medical Officer, Surgeon-Major-General T. Rudd, M.D., reports that the health of the troops contrasts very favourably with the previous year. As a rule the sanitary condition of the several stations was good.

At Cambridge Barracks, Portsmouth, the ashpits have been removed and replaced by moveable tins, which are emptied daily. At Winchester the barracks are very old, and some of the arrangements obsolete, but on the whole the sanitary condition is satisfactory. At Portland the waterclosets in officers' quarters are being fitted with ventilators to the soil pipes. A steam disinfector is much needed.

At Trowbridge there is not sufficient accommodation to permit of the proper isolation of infectious cases.

At Fort Wallington the drains have been relaid; at Hilsea a urinal has been provided for the riding school and a bath room at Fort Southwick.

The dampness of the soldiers' casemates in the Hilsea lines has been remedied, and the system of drainage at Anglesey, Cambridge, and Colewort Barracks, and Station Hospital, Portsmouth, has been re-constructed.

At St. Helen's Fort the water supply failed, but this has now been remedied. At Forts Grange and Gower new water closets were provided, and at the latter the mud from the moat was removed; the surface drainage also was much improved.

At Christchurch Barracks the earthclosets were renewed and new bread and meat stores erected.

At Winchester increased accommodation was provided in the infant and adult schools, and the ventilation and light in the main block of the barracks improved.

At Golden Hill Fort the water supply was improved. At Hurst Castle water tanks were erected and the drainage of the men's latrines re-arranged. At Parkhurst Barracks the water supply for flushing and washing purposes was improved, and the surface drains of the married quarters relaid.

Netley.

The Principal Medical Officer, Surgeon-Major-General P. B. Smith, M.D., reports that the condition of the Royal Victoria Hospital and barracks connected therewith is very satisfactory. Ventilation and warming arrangements are all that is required, and there has been no overcrowding. A few defects of a trifling nature in the drainage have been remedied as they arose. The medical officer in charge of the hospital for lunatics reports that the sanitary condition of the building is excellent. The waterclosets are worked on Tyler's torrent system, which works admirably. The warming apparatus works well. Some alterations have been carried out in the arrangement of the gas pipes. The supply of water is ample and good. The female hospital is also reported to be in excellent sanitary order. The closets are on the dry-earth system. The arrangements for warming, ventilation, and cooking all work well.

United Kingdom.

Thames District.

The Senior Medical Officer, Brigade-Surgeon Lieut.-Colonel W. W. Tomlinson, reports that the prevalence of cold easterly winds and fogs, and the exposed position of Sheerness, have conduced to rheumatic, pulmonary, and throat affections. The ventilation of the guard-rooms and cells, which was defective, has been attended to and improved. The tailors' shop at Chatham Barracks, which is badly ventilated and lighted, is to be reappropriated. Improvements have been suggested, and in some degree carried out in the ablution rooms and lavatories for the men. At Brompton Barracks a large portion of the main drainage has been re-laid, and the outfall decline increased. At Chattenden the drainage has been re-constructed on the latest principles, a new sewage straining chamber being built, and filtering arrangements for the fluid sewage. At Chatham Barracks one of the inlets of the main sewer which opened close to the meat store was found to be an outlet during the flushing of the sewer twice a day. This defect has been remedied. There has been considerable overcrowding in the Garrison School in Brompton Barracks, and a plan proposed to obviate it, but it has not yet been carried out.

At Chatham Barracks, in the married quarters, the alternate rooms on the ground floor of both blocks have been placed in communication by inside doors. A new latrine for the infant school is much required. At Gravesend, a plan for re-laying the whole drainage is in contemplation. The use of deodorants and disinfectants whilst emptying the cesspools, which system obtains in the borough of Gravesend, has been employed with success. The want of an infectious ward in the hospital is much felt. At Sheerness iron ashbins have been provided. Six new sculleries have been built in married quarters, and at Barton's Point new earth-closets and slate urinals provided.

South-eastern District.

The Officiating Principal Medical Officer, Surgeon Lieut.-Colonel W. E. Saunders, reports that the health of the troops on the whole has been good, but the season has been a wet one, and it has been difficult to keep huts and casemates dry. The drainage at Canterbury has been found to be in a most unsatisfactory condition. At Shorncliffe the old wooden huts are very unsatisfactory, and the drainage at present not good, but the main drainage of the camp is being connected with the Cheriton drainage system, until this is completed and the old "absorption pits" filled up the sanitary condition of the camp cannot be considered good. In some portions of the camp, however, the drainage has been much improved, and temporary drains laid down. The last remains of the old A Line's main drain has been rooted out, and the old block of latrines pulled down.

At Canterbury the ventilation of the stables has been improved, and some of the floors laid with Wilkes's concrete. Several minor improvements in the drainage have been completed, but the whole question of the re-construction and renewal of the entire drainage is under consideration. At Western Heights, Dover, latrines have been improved, and the wash and cook-houses ventilated. Considerable alterations are being carried out at the Station Hospital, and a barrack hut and quarters for the nursing sisters have been built.

At Dover Castle the main drainage ventilation has been improved, and the surface drains re-arranged.

At Lydd camp improved latrines have been erected, and a new system of water supply from Christmas Dell is being carried out.

At Hythe the drainage system of Fort Sutherland has been re-constructed, and new latrines taken into use. At Brighton cisterns have been provided for the urinals in Preston Barracks. There is a great want in the district of proper facilities for the disinfection of infected clothing and bedding. The municipal authorities are being communicated with on the subject. Very complete sanitary arrangements were completed in anticipation of a possible outbreak of cholera.

HOME DISTRICT.

United Kingdom

The Principal Medical Officer, Surgeon Colonel J. B. Hamilton, M.D., reports that the sanitary condition of the barracks and hospitals in the several stations in the Home District is, on the whole, very satisfactory.

At Oxford the night urinals have been properly trapped, and the surface drainage improved. At Kingston the ablution rooms have been skirted with cement, an additional dustbin supplied, and a gymnasium fitted up in the drill shed. At Reading the prisoners' room has been properly warmed. At Chelsea the old intermittent system of flushing the latrines has been replaced by a constant water supply. At Guildford gratings have been provided for the urinals. At St. George's Barracks, the main sewer running along the back of the barracks gas been entirely relaid in concrete, thoroughly ventilated, and put in sound working order. At Hounslow a disconnecting pit has been built in the drain to prevent sewer gas getting into the house drains, and the hot water apparatus in hospital fitted with a new saddle boiler. The Principal Medical Officer also states that there was some overcrowding at the Tower and at Kneller Hall, but means have been taken to obviate this. At Kneller Hall, also, the lake has become fouled by sewage from a farm, but this is being remedied. At Hounslow the hospital wards are insufficiently warmed; there was also great scarcity of water during the severe frost. At Caterham the hospital accommodation is insufficient, the station hospital being now solely used for infectious diseases and barrack-rooms taken up for hospital purposes. At Hyde Park Barracks a temporary hospital is in use during the re-construction of Albany Street Barracks. At Rochester Row the necessity for a new station hospital for London becomes daily more imperative, the present accommodation being quite inadequate.

Woolwich.

The Principal Medical Officer, Surgeon-Colonel A. F. Churchill, M.D., reports that owing to the prevalence of scarlet fever amongst the civil population there has been an increase of admissions from this cause over last year. The Camp Huts are old and dilapidated, but it is understood that permanent buildings are to replace them at an early date.

No material alteration has been made in the construction of the barracks during the year, and only minor improvements carried out. The whole system of drainage throughout the Royal Artillery Barracks is defective and out of repair, also the surface drainage in the rear range Royal Artillery Barracks is defective owing to bad paving. The re-construction of the whole system is under consideration. The drinking water is supplied from the Kent Waterworks, and is good and abundant. River water is used for flushing purposes.

The married quarters are deficient in accommodation, and thus various families are scattered over the town in lodgings. At Purfleet few alterations have been made, except that the canteen has been improved and enlarged.

Aldershot.

The Principal Medical Officer, Surgeon-Major General F. W. Wade, reports that the general health of the troops has been very good, and shows great improvement over last year. He lays much stress upon the inconvenience and possible danger to health caused by the proximity of the Sewage Farm. The re-construction of the Camp is fast approaching completion, and as far as hospital accommodation is concerned recommendations have been submitted for a new Infectious Hospital on Thorn Hill, for a new hospital for women and children, and a distinctly separate portion for cases of parturition, on a site N.E. of the Cambridge Hospital. The extension of the Cambridge Hospital is also sanctioned. The old hut hospital, known as 3rd Station

Hospital Marlboro' Lines is not up to modern requirements. The drainage in the vicinity of the Cavalry Barracks has been improved, and defects remedied: and an application made for increased married quarters. In the Wellington Lines a great deal has been done to improve the drainage, which was in an unsatisfactory condition. Fresh pipes have been laid down, and numerous man-holes built. There have been several improvements made in the cooking of the men's diets, which have been markedly successful. The vaccination returns are more satisfactory. In Marlboro' Lines, several improvements have been made by the replacing of old huts by modern brick buildings. The report on the Royal Military College, Sandhurst, is highly satisfactory as regards health and sanitation.

Channel Islands.

The Senior Medical Officer, Surgeon-Lieut.-Colonel J. F. Supple, reports that the barrack accommodation throughout the Islands is fairly good, but no fixed plan is adhered to. No grave sanitary defects exist. Some sanitary improvements of a minor character have been carried out. At Fort Regent, concrete paving has been laid down in front of the barrack-rooms. At Ordnance Cottage the cess-pit has been filled in, and a dry-earth closet erected. At Point de Pas alterations in drainage made. The cooking arrangements and food supply are excellent; but brandy of very inferior quality is easily obtainable, and causes a good deal of sickness. A proper provision of gymnasium is much to be desired. During the early part of the year influenza was very prevalent, it was of a mild type amongst the military; not so amongst the civil population, where it caused many deaths.

North British District.

Surgeon-Colonel W. Robinson, the Principal Medical Officer, reports that the health of the troops has been excellent. Only one case of enteric fever, and that of a doubtful character, is noted. Complaints were from time to time made by the medical officer in charge of Leith Fort, as to its insanitary surroundings, but these defects have now been remedied. The medical officer at Glencorse also complains of refuse from Edinburgh being deposited at the railway station in close proximity to the barracks. This defect still exists. Improvements have been made in cooking the men's diets, and by economising in the kitchens a comfortable evening meal has been arranged. At Edinburgh Castle the staff sergeant's quarters over garrison cells have been provided with waterclosets, and water laid on and sinks provided in the hospital sergeant's quarters. At Fort Matilda the drainage has been extended beyond low-water mark. At Hamilton fireplaces have been placed in the back rooms, and better latrine accommodation provided for officers. At Perth the surface drains have been improved and properly trapped, and at Piershill the hospital and married quarters have been provided with new pattern flush-out closets, the surface drainage improved, and the main drains provided with disconnecting traps and ventilators.

At Aberdeen a new cookhouse is very much wanted, and at Ayr the bath accommodation is insufficient, and some of the married quarters are too close to the ashpits and latrines. At Fort George the water supply is derived from two shallow wells inside the fort. The quantity is sufficient for the present garrison, but the quality is not good, and it requires careful filtration before being used either for drinking or cooking purposes. A scheme is being prepared to secure a water supply from a well outside the fort.

At Hamilton the drains at the officers' mess are defective, and sewer gas escapes into the buildings, the quarters have been vacated, but the defects are not yet remedied. At Stirling some alterations have been made in the ablution rooms. The military prison is kept in very good sanitary order. The results of vaccination and re-vaccination throughout the district have been most satisfactory.

Belfast District.

United Kingdom.

The Officiating Principal Medical Officer, Brigade Surgeon Lieut.-Colonel F. Howard, gives a favourable report of the health of the troops in the district throughout the year. Some important sanitary improvements have been carried out during the year. At Armagh a small gymnasium was constructed, and handed over for the use of the troops. At Belfast the quarters occupied by officers were evacuated in order to admit of all the drains, sewers, &c. being thoroughly examined and put in order. This was found necessary owing to an escape of sewer gas. The bell traps round the building were removed, also the valves of the waterclosets, the surface drainage reformed, and the number of gulley traps reduced. At the Station Hospital, with the exception of the removal of a wall in rear of the building, which obstructed light, no alteration has been made. The accommodation at present afforded in the hospital is insufficient for the sick during the winter months. It would be desirable to enlarge it by about 20 beds. At present a barrack room has to be utilized as a ward when there is no room in hospital. This is objectionable, and an empty room can not always be relied on. Dundalk.—Steps are being taken to enlarge the barrack and hospital at this station. There is also great need of an isolated ward or building for the treatment of infectious cases.

At Enniskillen one of the married quarters has been condemned as unfit for occupation.

At Newry, whilst the sanitary arrangements in the barracks are in a highly satisfactory state, yet the want of married quarters is much felt. The local sanitary authorities have been somewhat remiss in the removal of refuse from the yards of the tenements. This has been repeatedly represented. At Omagh the barrack walls, being much exposed to rain, are damp. Arrangements are being made to have them concreted and rendered impervious. The rations have been good everywhere, and extra blankets and fuel have been issued from time to time during the winter.

Dublin District.

The Principal Medical Officer, Surgeon-Major General W. Collis, states that, as previously reported, most of the barracks are old buildings, which it would be almost impossible to make perfect, though the suggestions that are continually being made for their improvement are being gradually carried out. At Ship Street Barracks the houses opposite, both in Ship Street and Stephen's Street are chiefly inhabited by poor people of dirty habits, in fact, the barracks are situated in one of the worst slums of Dublin. The ablution and bath rooms are situated in a damp, dark basement, and are quite unsuitable. There is over-crowding in some of the married quarters, but it has now been decided that families with 3 children and upwards are to be supplied with two rooms. The drainage arrangements at Portobello Barracks are defective, and the paucity of admissions for enteric fever remarkable. At Richmond Barracks the married quarters are inadequate; and one of the surface drains requires alteration. At the Royal Infirmary the drainage has been re-constructed, the nursing staff and patients being temporarily accommodated in Steeven's Hospital. At Island Bridge Barracks the drainage is in a very faulty condition. A very careful investigation has been made, and it is found that nothing effective can be done until the barracks have been entirely re-constructed. New Cavalry Barracks (the Marlborough Barracks) have been completed, and were occupied in September. At Arbour Hill Hospital the water supply has been improved, and some of the barrack rooms demolished and re-constructed. At the Royal Barracks very extensive alterations and re-constructions are in progress, and the drainage is being as far as practicable put into thorough order. At Pigeon House Fort the floors of barrack-rooms have been relaid, and water supply improved. At Naas a new drill shed has been completed. At Athlone, the floors of several barrack-rooms have been relaid, and improvements in method of flushing the drains carried out. At Mullingar, a mobilization store completed, floors relaid in several rooms, and improvements in drainage. At Castlebar the built drains replaced

United Kingdom.

by pipes, and subsoil drainage provided. At Longford the married quarters, which were very damp, have been put in good order.

In anticipation of a cholera outbreak, very elaborate precautions and preparations were worked out. Arrangements for tent hospitals, sanitary precautions in barracks, provision of special ambulances, &c., &c.

Cork District.

The sanitary condition of the barracks throughout this Command is reported by the Principal Medical Officer, Surgeon-Colonel C. A. Maunsell, M.D., to be in a satisfactory condition. He considers it a great point that the elevated position in each town was chosen, and considers that, owing to this the health of the troops contrasts so favourably with that of the civilian population. In Cork barrack-room accommodation for the Medical Staff Corps is much needed, and the water supply has not been quite satisfactory. At Ballincollig the new drainage system for the barracks is approaching completion, and a water supply is being introduced into the village and barracks. The reservoir is 13 miles distant, and the water will be filtered through sand and polarite. The condition of the surroundings of the barracks is most insanitary, and additional married quarters are much wanted. At Cahir the soakage pit for liquid sewage has ceased to work properly, and this condition is now being remedied. At Fermoy the canteen and coffee shop are too small, and arrangements were proposed to take over a temporary building in addition. At Kilkenny the sanitary condition of the city is very bad, and the civilian death rate high, but the general state of the barracks is good. Kinsale and Charles Fort.—The latter is not a desirable station for troops, as the accommodation is not good, and its isolated position renders the carrying out of sanitary supervision difficult. At Kinsale the water supply has to be pumped by hand, and a steam pump is much to be desired. "It is gratifying "to note that though influenza and typhoid fever have prevailed in this "town, and caused a high rate of mortality, yet no cases occurred amongst "the troops or their families."

At Limerick the condition of the barracks is satisfactory, but the drainage of the town is most defective. At Templemore a swimming bath is needed. The deep artesian well is not sufficiently protected from surface drainage, but this is being remedied. At Tipperary the drinking water was found to be bad on analysis. The storage tank was found out of order, and this has now been rectified, and the water is again potable. At Waterford the barracks are in good sanitary order, but the immediate surroundings are very dirty and insanitary. The bath accommodation requires to be augmented. The cesspit in the Infantry barracks has been removed, and thorough ventilation of the drain connected with the town system carried out.

At Duncannon Fort the wells have been protected from surface drainage, and the drainage improved throughout. The rations supplied to the troops have been good, and the new system of messing adopted which has given universal satisfaction.

Curragh District.

The Senior Medical Officer, Brigade Surgeon Lieut.-Colonel R. C. Eaton states that the health of the troops in the district has been, on the whole, good, and compares favourably with the preceding year. The sanitary conditions were generally satisfactory, and any minor defects at once remedied. The old wooden huts are gradually being taken down and replaced by permanent barracks. The warming of the huts and quarters has been carefully attended to by the frequent issue of extra coal allowance. The lighting of the Camp by oil is imperfect and insufficient. Amongst the chief improvements are at the Curragh, increased water supply, at Newbridge improvements in latrines, washhouses, and surface drains. It is proposed to increase the bath accommodation, to replace the old brick drains by stoneware pipes, and to relay the main drain to the sewage farm.

III.—ON THE HEALTH OF THE TROOPS SERVING IN THE MEDITERRANEAN.

Sickness and Mortality.

I.—GIBRALTAR.

Gibraltar. The average strength of the warrant officers, non-commissioned officers, and men serving in the Command during the year was 4,936, and the force consisted of 4 Companies of the Eastern Division, Royal Artillery, 4 Companies Royal Engineers, the 1st Battalion Somersetshire Light Infantry, the 2nd Battalion South Lancashire Regiment, which left for Malta in September, and was replaced by the 1st Battalion Middlesex Regiment from Ireland, the 1st Battalion Royal Highlanders, and the 2nd Battalion King's Royal Rifle Corps, also detachments Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff.

In the subjoined table will be found the principal statistics of sickness and mortality among the troops in garrison :—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
4,936	3,364	14	2	16	62	47	228·04	681·5	3·24	12·56	9·52	46·19

Compared with the corresponding ratios in the preceding year, an increase (due to venereal diseases) has occurred in the admission rate equal to 69·4 per 1,000, and in the average number constantly sick of 6·46, but the death-rate has declined by 1·66 per 1,000.

Compared with average similar ratios for the previous ten years, a decline is observed in all these rates, being 98·3 in the case of admission, 3·00 in that of mortality, and ·54 in that of constant inefficiency through sickness.

The average sick time to each soldier was 16·91 days, being longer than the corresponding period in the previous year by 2·41 days, but shorter than the average period in the preceding 10 years. by ·14 of a day. The average duration of each case of sickness was 24·81 days, which is longer than in the previous year by 1·12 days, and 2·94 days above the average for the previous 10 years.

In Abstract XL. are given the principal statistics of individual Corps which served in the command during the year.

The highest admission rate occurred in the 1st Battalion Somersetshire Light Infantry, being 1006·3 per 1,000, followed by 856·6 in the 2nd Battalion King's Royal Rifle Corps, and 813·7 in the 1st Battalion Middlesex Regiment. The lowest ratio amongst the Companies of Royal Artillery was 432·0, and that of the Infantry Regiments 576·8. The greatest amount of inefficiency through sickness was in the 1st Battalion Middlesex Regiment, 73·24 per 1,000, and next, the 1st Battalion Somersetshire Light Infantry, with 64·75. The lowest ratio was, not reckoning such small bodies of troops as the District Establishment, Royal Artillery, and Departmental Corps, 21·95 in the Royal

Gibraltar.

Engineers, then 28·80 in No. 3 Company, Eastern Division, Royal Artillery, the next above being 29·24 in No. 19 Company. With regard to mortality, no deaths occurred in Nos. 6, 12, and 19 Companies or the District Establishment, Royal Artillery, nor in the Medical Staff Corps, or Garrison Staff and Departments.

In the Infantry, the 1st Battalion Middlesex Regiment had the highest death-rate, of 6·89 per 1,000, and the 2nd Battalion South Lancashire Regiment the lowest of 1·59.

As to the influence of age on sickness and mortality, the admission rate of men under 20 years of age was 740·7 per 1,000, as compared with 559·4 in the previous year. Between 20 and 25 years the rate was 808·5, as compared with 677·5. Between 25 and 30 years the rate was 556·5, as compared with 607·8, and from 30 years upwards 219·3, as compared with 374·5. The ratios of mortality of men under 20 years were 3·00 per 1,000, of between 20 and 25 years 3·41, between 25 and 30 years ·88, and 30 years and upwards 2·15, compared with *nil*, 4·90, 2·63, and 6·07 respectively in the preceding year.

In considering the influence of service in the Command on sickness amongst the troops, it is found that the admission rate of men under one year's service was 909·3 per 1,000, as compared with 929·6 in the previous year. In the second year of service the rate was 664·0, as compared with 541·8. In the third year the rate was 397·1, as compared with 528·2, and over three years' service in the Command showed a rate of 449·7, as compared with 537·2 in the previous year.

The mortality rate amongst men in their first year of service in the Command was 2·18 per 1,000, as compared to *nil* in the preceding year. In the second year it was 4·66 as to *nil*. In the third year it was 4·84 as to 2·64 in the previous year, and in those men over three years in the command the rate was ·84 as to 8·92 in the previous year.

In Abstract No. II. will be found the more important statistics of sickness, mortality, and invaliding, arranged according to the different groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—Under *eruptive fevers* only 4 admissions are recorded, 3 for scarlet fever and 1 epidemic rose rash.

Enteric Fever caused 25 admissions and 4 deaths, being in the ratio of 5·1 and ·81 per 1,000 respectively. The admission rate is higher than the preceding year by 2·8, but lower than the average of the previous six years by 7·4; the mortality rate is higher than that of the previous year by ·17, but less than the average for six years by 1·20. The per-centage of mortality to attack was 16·0, that in previous year being 27·3, and for preceding six years 16·2.

As compared to 1891 there has been an increase of 14 admissions and 1 death. Two of the cases, however, being re-admissions, the actual increase is only 12. The year 1891 was exceptional as regards the small number of enteric fever cases, and the decrease was probably due to the fact that there was no considerable addition of young soldiers to the garrison till the end of the year. Omitting, therefore, this exceptional year, 1892 compares favourably with previous years. One case was that of a man in the Medical Staff Corps, who contracted the disease from a patient, but in the other cases no cause could be traced within the Barracks.

Simple Continued Fever.—Admissions 78, and no deaths, were noted, being in the ratios of 15·8 and *nil* per 1,000 respectively. The admission rate is less than the previous year by 6·2, and than the average of last six years by 12·7 per 1,000.

Up to 1885 much inefficiency was caused by this disease, but in recent years there has been a marked decrease. The six years from 1880-5 showed an average admission rate of 154·3 per 1,000. The next six years only gave a rate of 28·5 per 1,000. These excellent results appear to have followed *pari passu* with the general application of the following sanitary improvements throughout the Fortress, viz., covering the ground in and around the Barracks and habitations generally with cement concrete; re-laying, trapping, and securely jointing drains; improvement of latrines; free use of disinfectants in sewers; more frequent and better removal of refuse; also by increasing the cubic space per man in Barracks at night during the summer by means of tents.

Gibraltar.

Malarial Fevers.—There were only 8 cases of ague in men who contracted the disease elsewhere.

Venereal Diseases.—There were 189 admissions for primary syphilis, being in the ratio of 38·3 per 1,000. This is higher than the corresponding rate in the previous year by 18·2. Including simple venereal ulcer, which caused 304 admissions, the admission rate for primary venereal sores was 99·9 per 1,000, being above the ratio in 1891 by 29·0, and below the average of last six years by 15·4. Secondary syphilis caused 103 admissions, or 20·9 per 1,000. This is less than the previous year by 3·0, and than the average of past six years by 8·8.

Gonorrhœa gave 732 admissions, being at the rate of 148·3 per 1,000. This is higher than that of the previous year, by 61·6, and than the sexennial average rate by 45·1. The total admission rate for all forms of venereal disease was 269·1 per 1,000, being above the rate of the previous year by 87·6, and above the sexennial average by 20·9. The total amount of constant inefficiency on account of these diseases was equal to 21·82 per 1,000, being higher than the previous year by 7·46, and above the average rate by 4·56.

Parasitic Diseases.—3 admissions for tænia solium.

Alcoholism caused 19 admissions, or 3·9 per 1,000, as compared with 7·5 in the previous year.

Debility shows a ratio of 2·6 per 1,000, dependent on 13 admissions. This is lower than the previous year by 3·0.

Rheumatism.—116 cases are recorded, giving a ratio of 23·5 per 1,000. This is the same as in the previous year, and lower than the average sexennial rate by 8·7.

Tubercular Diseases.—There were 11 cases of tubercle of lung, and no deaths. In the previous year there were 6 cases and 3 deaths of invalids sent home.

There were 36 admissions for other diseases of this group; they comprised 23 non-malignant new growth, 1 malignant new growth, 1 scrofula, 1 purpura, 9 anæmia, and 1 diabetes. One death occurred from carcinoma.

LOCAL DISEASES.—*Diseases of Nervous System.*—There were 44 admissions and 1 death, giving an admission rate of 8·9 per 1,000. This is lower than the previous year by 1·8, but above the sexennial average by 4·0. The principal causes of admission were neuralgia, 26 cases, and epilepsy, 11; the remaining cases included vertigo, 1, tetanus, 1, and mental diseases, 5. *Diseases of the eye* caused 51 admissions, equal to a ratio of 10·3 per 1,000, which is lower than the previous year and below the average rate. Twenty-eight, or a little more than half the admissions, were for conjunctivitis, 10 for iritis, the remainder for various causes.

Diseases of other Organs of Special Senses.—Admission ratio was 13·6 per 1,000, an increase of 5·7 on the last year's rate, and above the average by 7·7. Of 67 admissions, 58 were for inflammation of external meatus, occurring chiefly during bathing season; 6 for perforation of membrana tympani, 3 for deafness.

Diseases of Circulatory System caused 15 admissions and 1 death, being a rate of 3·0 and ·20 per 1,000 respectively, as compared with 4·5 and ·64 in the previous year, and 1·9 and ·32 for previous six years. The admissions comprised 2 for valvular disease of heart, 2 hypertrophy of heart, 6 palpitation, 1 phlebitis, and 4 varicose veins. The death was due to hypertrophy of heart.

Diseases of Respiratory System caused 134 admissions and 2 deaths, one being that of an invalid after arrival in England, being in the ratios of 27·2 and ·41 per 1,000, almost identical with ratio for previous year. The admission ratio is, however, slightly above the sexennial average rate. 113 of the admissions were due to bronchial affections, and the remainder comprised 1 œdema glottidis, 1 laryngitis, 2 asthma, 2 hœmorrhage of lung, 3 pneumonia, 10 pleurisy, and 2 empyema. One death from bronchitis and one from pneumonia.

Diseases of the Digestive System caused 356 admissions and 2 deaths. The admission rate, 72·1 per 1,000, is below the corresponding rate of previous year by 8·4, and below also the sexennial average. Principal causes of admission were sore throat 121, dyspepsia 78, colic 44, diarrhœa 36, gumboil 24, &c. Both deaths due to peritonitis.

Gibraltar.

Diseases of Lymphatic and Glandular System.—59 admissions occurred, equal to 12·0 per 1,000, an increase of 1·3 on last year's rate, and above the average.

Diseases of Urinary System caused 13 admissions, 11 being for incontinence of urine.

Diseases of Generative System caused 381 admissions, or 77·2 per 1,000, being higher than preceding year by 13·5, but below sexennial average. The chief cause was simple venereal ulcer, 304 cases; and 49 cases of orchitis.

Diseases of Organs of Locomotion gave 48 cases, or a rate of 9·7 per 1,000. This is higher than last year and the average.

Diseases of Connective Tissue caused 108 admissions, or 21·9 per 1,000, being an increase on last year's rate of 2·2, and above the average of six years by 5·2.

Diseases of the Skin.—285 admissions are recorded, the ratio being 57·7 per 1,000. An increase is observed of 5·6 over last year, and of 19·3 over the average. The principal diseases were eczema, ulcer, boil, whitlow, and itch.

Injuries.—460 are returned and 4 deaths. The admission ratio, 93·2 per 1,000, is lower than in previous year by 13·1, and is 8·0 below average rate. One case of multiple injury occurred.

Among local injuries, the principal were abrasions, contusions, wounds, and sprains. Of the 4 deaths, 2 were due to accidental drowning, 1 suicide by gunshot, due to mental depression, and 1 due to an accidental fall from a window.

Invaliding.—The number of men invalided home during the year was 62, being in the ratio of 12·56 per 1,000, less than the previous year by 1·75, but above the sexennial average by 7·11 per 1,000. Among separate corps, and excluding those whose annual average strength did not exceed 100 men, the highest invaliding rate was 28·00 per 1,000 in No. 12 Company, Eastern Division, Royal Artillery, and the next 16·12 in No. 6 Company. There was no invaliding in the 1st Battalion, Middlesex Regiment, which arrived from Kilkenny in September.

Invaliding, according to age, was as follows:—9·01 per 1,000 among men under 20 years of age, as compared with 6·99 in preceding year; 12·82, as compared with 10·26, between 20 and 25 years; 15·01, as compared with 17·14, between 25 and 30 years, and 12·90 as compared with 30·36 in men over that age.

With regard to invaliding according to length of service in the Command, the ratio amongst men in their first year of service was 3·06 per 1,000, as compared with *nil* in preceding year; in their 2nd year 13·99 as compared with 5·23; in the third year 12·10 as compared with 4·40; over that service 30·43 as compared with 33·91. The principal causes were nervous diseases 8, including 4 for mental affections, tubercle of lung 7, or 1·42 per 1,000, enteric fever 5, or 1·01 per 1,000, simple continued fever, secondary syphilis, epilepsy, &c.

The number of men finally discharged as physically unfit for further service was 47, equal to a ratio of 9·52 per 1,000, higher than the previous year's rate by 3·54 and of the sexennial rate by ·91 per 1,000. The principal disabilities necessitating discharge were diseases of the nervous system 2·23, including 1·01 for mental diseases, tubercular disease 1·62, diseases of special sense (eye, ear, and nose) 1·82, and debility 1·22 per 1,000.

Officers.—The average strength was 180, and there were 70 cases of sickness and 1 death. The ratio of admission was 388·8 per 1,000, being lower than preceding year by 40·5. The principal cause of sickness was simple continued fever, 11 cases. Three cases remain under treatment, the rest have recovered. The death occurred from dysentery.

Women.—The average strength was 321, and there were 171 admissions and 2 deaths, being in the ratios of 532·7 and 6·23 per 1,000 respectively, the former showing an increase of 14·1, and the latter a decrease of 7·33. One case of septicæmia and one of pneumonia, proved fatal.

Children.—The average strength was 570, the number placed on sick list 422 and 21 deaths. The admission ratio was 740·3 and the death rate 36·84 per 1,000, the former showing a decrease of 33·0 and the latter an increase of 1·06.

The principal causes of sickness were, whooping cough 94, bronchitic affections 86, and diarrhœa 40. There were two cases chicken-pox, 1 measles, 3 scarlet fever, 3 influenza, 2 mumps, 4 diphtheria, 24 simple continued fever, and 2 enteric fever.

The deaths were 2 from whooping cough, 2 diphtheria, 1 immaturity at birth, 1 impervious anus, 2 debility, 1 inflammation cerebral membranes, 2 convulsions, 1 croup, 3 bronchitis, 1 pneumonia, 1 enteritis, 3 diarrhœa, and 1 asphyxia from overlying.

Sanitary Conditions.—The Principal Medical Officer, Surgeon Major-General R. Lewer, reports that in the south district the sanitary condition of the barracks has been good, whilst in the north district, which includes the town of Gibraltar, troops are quartered in bastions and casemates, which, for military reasons, do not admit of sanitary measures being fully applied to them.

The chief insanitary conditions existing among the civil population, with whom the troops in town are so much in contact, are—a defective system of sewerage; a water supply depending on rain collected from areas exposed to pollution, and stored without previous filtration; overcrowding and the defective sanitation consequent thereon.

The milk supply is also very unsatisfactory, and exposes both the troops and civil population to the risk of any diseases that may be prevalent in Spanish territory.

The question of water supply and sewerage is being considered in a scheme for boring a tunnel through the Rock, in the expectation of obtaining a water supply from its centre, and, failing that, of utilizing the tunnel to carry the sewage to the sea at the eastern beach.

The defects arising from overcrowding, and from the condition of the dwellings of the civil population, are being remedied as far as practicable, by a system of house-to-house inspection, and by the control of new buildings. A great improvement has been effected in the manner of the disposal of refuse, by the erection of a dust "destructor," capable of consuming all the refuse of the Fortress. The Principal Medical Officer strongly advises the re-introduction of the Contagious Diseases Act, owing to the very marked increase of venereal affections, and the very large number of soldiers rendered inefficient thereby.

The leading sanitary improvements for the year are:—

North Front Hutments.—Guard room enlarged, water tanks erected, ground concreted.

Grand Casemate Barracks.—Drainage improved, new latrines for married quarters, and floors raised.

Moorish Castle.—Another storey added, and two large three-storied barracks, are being built, also a sergeants' mess and officers' quarters.

Town Range Barracks.—Ventilation and light improved by the removal of useless walls. The heavy masonry staircases removed and replaced by light iron stairs. Ablution room for the guard, and new latrines for the married quarters.

South Barracks.—Floors ventilated and concrete laid under them. Several old walls and buildings in rear to be pulled down and thus improve perflation.

Rosia Barracks.—Wood floors substituted for stone.

Buena Vista Barracks.—Drainage generally improved and urinals and waterclosets built for officers' quarters.

Windmill Hill Barracks.—New canteen is being built.

Hospital Accommodation.—By the decision of the War Office authorities, that the excess of military sick should be treated in the naval side of the hospital, the difficulty of supplying suitable accommodation has to some extent been met. Two non-dieted hospitals are still in use, and it has been decided to build an overflow hospital of 90 beds. This should suffice for the needs of the garrison.

Malta.

II.—MALTA.

The average strength of the troops serving in Malta during the year was (with the exception of the Royal Malta Artillery) 7,847. The garrison was composed as follows:—Five companies of the Southern Division, Royal Artillery, and three of the Royal Engineers, the 2nd Battalion Royal Scots until 7th March, the 1st Battalion Royal West Surrey Regiment (arrived on 2nd January), the 2nd Battalion South Lancashire Regiment (arrived in September) the 1st Battalion Welsh Regiment, the 1st Battalion Royal Berkshire Regiment, the 1st Battalion Cameron Highlanders (from 7th March), the 2nd Battalion Royal Irish Rifles, the 2nd Battalion Connaught Rangers, the 2nd Battalion Essex Regiment (until 28th September), detachments of Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff.

The principal statistics of sickness and mortality are shown in the subjoined table:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
7,847	5,686	61	6	67	181	110	371·84	724·6	8·54	23·06	14·02	47·38

Compared with the corresponding ratios in the previous year, the admission ratio has increased by 68·0, the death-rate by 2·16, and the average constantly sick by 2·59. As compared with previous decennium, there is an increase of 48·3, ·49, and 3·01 respectively. The average sick time to each soldier was 17·34 days, an increase of ·99 of a day over previous year, and of 1·15 days on the decennial average period. The average duration of each case of sickness was 23·93, a decrease below previous year of ·97 of a day, but almost identical with the average of the preceding ten years. The statistics of sickness and mortality in individual corps are shown in Abstract XL.

The highest ratio of admission in any individual corps which had been in the Command the whole of the year was in the 1st Battalion Royal West Surrey Regiment, 1147·2 per 1,000. The 1st Battalion Welsh Regiment comes next with 900·0, the 2nd Company, Southern Division, Royal Artillery next with 865·5, then the 2nd Battalion Royal Irish Rifles with 740·0, and then the 12th Company, Southern Division, Royal Artillery, with 687·0 per 1,000. The corps with the lowest admission rates were the 29th and 27th Companies, Southern Division, Royal Artillery, 389·6 and 514·6 per 1,000 respectively. The mortality rate was highest in the 2nd Company, Southern Division, Royal Artillery, 22·99, per 1,000, followed by 11·42 in the 1st Battalion Royal West Surrey Regiment; the lowest rate was 3·45 per 1,000 in the 29th Company, Southern Division, Royal Artillery, followed by 4·84 in the 2nd Battalion Connaught Rangers. Constant inefficiency through sickness was highest in the 1st Battalion Royal West Surrey Regiment and the 2nd Company, Southern Division, Royal Artillery, 69·85 and 64·60 per 1,000 respectively, the least in the 29th Company, Southern Division, Royal Artillery, the annual rate being 26·80 per 1,000.

With regard to the effect of age on sickness and mortality, it is calculated that the admission rate of men under 20 years of age was 661·6 as compared with 621·1 for previous year; between 20 and 25 it was 852·0 as compared with 771·2; from 25 to 30 it was 579·7 as compared with 555·8; and for those over 30 years of age 509·2, as compared with 351·5 for previous year. Mortality under 20 years gave a ratio of 5·42, almost the same as in previous year; from 20 to 25 years it was 8·17, an increase over 1891, and from 25 to 30 and 30 years and over, the ratios were 8·98 and 3·66 respectively, the former being higher and the latter much the same as the corresponding ratios in the previous year. *Malta.*

As to length of service in the Command, it is found that the admission rate of men in their first year was 633·4 per 1,000; that among men in their second year 647·2; that among men in their third year 705·9; that among men in their fourth year 1926·5; and that among men over four years' service in the Command 494·5. Comparing the ratios with the corresponding results in the previous year, an increase of 1208·0 is observed in that for men in their fourth year, and one of 286·5 for men in their third year, but a decrease has occurred in all the other ratios. Mortality among men in their first year in the Command was at the rate of 7·64 per 1,000; among men in their second year 5·26; among men in their third year 8·26; among men in their fourth year 15·73; and among men over that service 7·26. Compared with corresponding ratios in the previous year, there is a decrease in that among men in their second year of service in the Command, but an increase in the remainder.

In Abstract No. III. will be found a table showing the principal statistics of sickness and mortality according to the several groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Eruptive fevers* were represented by 3 cases of measles only.

Enteric Fever caused 74 admissions and 25 deaths, the ratios being 9·4 and 3·19, as compared with 6·2 and 2·46 in previous year, and 5·1 and 1·87 respectively for the previous sexennial period. The per-centage of mortality to attack was 33·78 as compared with 39·58 in 1891. and 36·98 the average for six years. With regard to the total service of the men attacked, 10 were under one year's service, 15 under two years, 8 under three years, 15 under four years, 6 under five years, and 20 five years and over. As regards service in the Command, 47 men were under one year, 14 under two years, and 13 over two years. As regards age, 13 were under 20 years, 12 under 21, 8 under 22, 12 under 23, 7 under 24, and 22 of 24 years and upwards. 8 cases occurred in the first quarter of the year, 4 in the second quarter, 17 in the third, and 45 in the fourth quarter.

The greatest number of admissions were from Pembroke Camp and the Sliema side of the harbour, especially at the commencement of the outbreak; afterwards the troops in Lower St. Elmo suffered. The soldiers' families escaped almost entirely. The water supply of many of the grog shops in the town frequented by the men is notoriously impure, being derived in most instances from wells having a cesspit adjacent. It is feared also that, owing to the unusually heavy autumnal rains, the aqueduct water in, at all events, one of its branches became contaminated, the sewage contents of neighbouring cesspits having been washed into it.

Simple Continued Fever.—There were 1,369 admissions for this disease, 14 deaths (including 3 of invalids after leaving the Command). The average constantly sick being 105·63. The ratios per 1,000 for admissions and deaths were 174·5 and 1·78, as compared with 109·1 and 1·17 in 1891. The average constantly sick rate was 13·46, as compared with 7·75 in previous year. There is a considerable increase of sickness under this heading over 1891. This is due probably to the large number of young soldiers in the ranks.

Dysentery.—There were only 15 admissions from this disease, just one half of last year's number. The ratio being 1·9. There were no deaths. *Influenza* caused 34 admissions, and *diphtheria* 1, which proved fatal.

Malarial Fever.—There were 8 admissions for ague, and *erysipelas* caused 3 admissions, all of a mild type.

Venereal Diseases.—Primary syphilis caused 131 admissions, as against 248 in previous year, this gives a ratio of 16·7, or nearly one half less than the rate for 1891, the ratio for constantly sick was 1·58, as compared with 3·73 for previous year. Including simple venereal ulcers the total admission ratio was 43·7, a decrease of exactly one half below previous year, but an increase of ·7 over previous sexennial period. *Secondary syphilis* caused 146 admissions, being a ratio of 18·6, a decrease of 3·2 below previous year.

Malta.

Gonorrhœa caused 656 admissions, an increase over previous year, of 124, the ratios being 83·6 as against 69·1, there was an increase also of 28·3 over previous sexennial period. Including all forms of venereal disease, the admission rate shows a decrease of 32·0 under previous year, being 145·9 to 177·9, and a decrease also of 4·45 in the ratio of those constantly sick. As compared, however, with the previous sexennial period there is an increase of 33·9 in the admission rate, and of 2 17 in those constantly sick.

Parasitic Diseases caused 8 admissions, and *alcoholism* 20 admissions.

Debility caused 79 admissions, being a ratio of 10·1, an increase of 3·1 over previous year.

Rheumatism gave an admission ratio of 25·4, almost identical with the previous year.

Tubercular Diseases caused 16 admissions and 4 deaths, including that of an invalid, the admission ratio being 2·0 and the death-rate ·51, as compared with 3·1 and ·78 for previous year; all the cases and also the deaths were due to lung affection. There were 31 admissions for *other diseases* in this group, of which 22 were for non-malignant new growth. There was one death from tumour of the brain.

LOCAL DISEASES.—*Diseases of the Nervous System.*—There were 84 admissions and 1 death, the ratios per 1,000 being 10·7 and ·13 respectively, as against 12·6 and ·26 in previous year. There were 32 cases of mental disease.

Diseases of the Eye caused 78 admissions, giving a ratio of 9·9, almost identical with previous year.

Diseases of other Organs of Special Senses gave a ratio of admission of 11·9, being nearly the same as last year. Most of the cases were inflammation of the external meatus.

Circulatory System.—There were 48 admissions, a ratio per 1,000 of 6·1, almost the same as last year. Most of the cases were palpitation of the heart. There was one death in the Command, due to degeneration of muscular substance of heart, and two, invalids, to aneurysm and valve disease.

Respiratory System.—There were 222 admissions and 6 deaths, being in the ratios of 28·3 and ·76 respectively. This shows an increase of 10·6 in admission rate, and ·11 in death-rate over previous year. Three-fourths of the cases were for bronchial affections. Of the 6 deaths 2 were bronchitis, 2 pneumonia, 1 pleurisy, and 1 pneumonic phthisis.

Digestive System.—There was an increase in the admission rate of 5·8 over previous year, and 7 deaths gave a rate of ·89, an increase also of ·63. The principal causes of admission were affections of the mouth and throat, dyspepsia, diarrhœa, and hepatic disorders. The deaths were two from abscess of the liver, two from peritonitis, and one each from colic, hepatitis, and gall stones.

Lymphatic and Glandular System gave an admission rate of 7·3, almost identical with last year.

Urinary System.—There were 13 admissions, being a rate of 1·7, slightly less than in previous year.

Generative System.—There has been a great decrease in the number of admissions, only 344 as against 523 in the previous year. Of the admissions 212 were ulcer of the penis. The ratios of admissions and constantly sick were 43·8 and 2·73 as compared with 68·0 and 5·36 in 1891.

Diseases of Organs of Locomotion caused 44 admissions, 19 being due to synovitis. The ratio being 5·6 as against 6·4 in preceding year.

Connective Tissue.—There was an increase of admissions under this heading, the number being 202 against 162 for 1891. The ratio per 1,000 for admissions was 25·7 against 21·0 in previous year.

Diseases of the Skin.—There were 338 admissions for this cause, giving a ratio of 43·1 as against 40·4 in previous year. The principal diseases were eczema, ulcers, boils, whitlow, and itch.

Poisons.—Under this head there were two admissions, and a fatal case of alcoholic poisoning occurred out of hospital.

Injuries.—These caused 717 admissions, a slight increase over previous year. They were chiefly due to simple contusions, sprains, and wounds, the ratio for admissions being 91·4 as against 89·0 in 1891. There were two deaths from asphyxia, one from submersion, and one from strangulation (suicidal); one from heat apoplexy, and one from fracture of base of skull, the result of an accidental fall down some steps. *Malta.*

Invaliding.—There were 181 men invalided to England, being in the ratio of 23·06 per 1,000 as compared with 23·13 in the previous year, being practically the same. Excluding corps with small average strength, the highest rates of invaliding were in the 2nd Company, Southern Division, Royal Artillery, 42·14 per 1,000; 2nd Battalion, Connaught Rangers, 30·26; 1st Battalion, Royal West Surrey Regiment, 29·19; 2nd Battalion, Royal Irish Rifles, 28·57; the lowest being in the 29th Company, Southern Division, Royal Artillery, with 6·90; the 1st Battalion, Royal Berkshire Regiment, 8·97, and the 1st Battalion, Cameron Highlanders, 10·07. With regard to the ages of the men invalided, 24, or 26·03 per 1,000, were under 20 years of age; 95, or 23·51, were from 20 to 25 years; 44, or 18·81, from 25 to 30 years, and 18 or 32·97, were 30 years and over. Compared with previous years, a decrease is observed in those under 20 years, and from 20 to 25 years, whilst there is an increase in the ratios of men between 25 to 30, and 30 years and upwards. As regards length of service in the Command, in men under 1 year the ratio was 27·92, in their 2nd year 22·19, in 3rd year 26·17, in 4th year 17·48, and over 4 years 9·98. These results show, as compared with 1891, an increase in those under 1 year and in the 3rd year, but a decrease in the others. The principal causes of invaliding were continued fever 7·01, enteric fever ·89, nervous diseases 4·34, diseases of circulation 1·66, and tubercular diseases ·76.

The number of men finally discharged was 110, a ratio per 1,000 of 14·02, being slightly lower than last year's rate. The disabilities causing final discharge were, principally, nervous diseases 4·58 per 1,000, diseases of circulation 1·66, tubercular disease 1·40, and urinary disease ·51.

Officers.—The average strength was 205, and there were 163 admissions, 1 death, and 14 invalided. The ratio of admissions per 1,000 was 795·1, an increase of 68·3 over that in 1891, but the death-rate was considerably less, viz., by 15·74. The death was due to enteric fever. The principal cause of sickness was fevers, 75 cases. The causes of invaliding were simple continued fever 6 cases, debility 2, rheumatism 2, diseases of eye 2, inflammation of intestines 1 case, and mania 1.

Women.—The average strength was 319, and there were 251 cases of sickness, or a ratio per 1,000 of 786·8, a considerable increase over 1891. No deaths. The principal diseases were fevers, 85 cases, debility, 46, and diseases of respiration and digestion 19 and 27 respectively.

Children.—The average strength was 510, and there were 550 cases of sickness, being a ratio of 1078·4. This is very much more than in 1891 when the rate was 379·0. There were 41 deaths, giving a ratio of 80·39, nearly double that of previous year. The principal causes of sickness were measles 81 cases, fevers 83, eye diseases 42, respiratory diseases 91, and digestive disorders 141 cases. The deaths were due to measles 5, fever 4, dysentery 1, debility 3, immaturity at birth 3, convulsions 1, epilepsy 1, pneumonia 1, bronchitis 4, dyspepsia 1, enteritis 3, and diarrhœa 14.

Sanitary Conditions.—The Principal Medical Officer, Surgeon-Major General C. D. Madden reports that the health of the troops in the Command was not so good as in previous year. There was a decided increase in the number of cases of both enteric and Mediterranean fevers, and these are always the chief causes of inefficiency. The heavy autumn rainfall was injurious owing to its having washed impurities into the main drinking water supply, and to this fact the great amount of sickness which occurred during November and December was due. Any violation of sanitary laws is quickly developed into an outbreak of disease in this climate. As an instance, at Gozo during the summer, where an outbreak of enteric fever occurred, a defective drain contaminated the ditch at Fort Chambray. Much of the sickness might doubtless be averted if the men could be induced to refrain from drinking the impure water, ginger beer, &c., which they obtain in the town.

All milk is now boiled before use since the outbreak of enteric fever, and the men's drinking water is also boiled as well as filtered. The result of the latter expedient has been excellent. The authorities have been strongly

Malta.

urged as to the necessity for providing fireplaces in all living rooms from December 15th to March 15th in each year. These places are, many of them, damp and cheerless at this period, and have a depressing effect on body and mind. Also there is great need of proper drying rooms in barracks to enable the men to dry their clothes properly after getting wet. It has been shown that chill is a very potent factor in the production of fever.

The fact of there being a dual water supply is to be deprecated, viz., one tap for drinking water and another for ablutionary purposes. It has been suggested that these latter taps should be painted scarlet as a warning against drinking such water. The overcrowding in barracks has been much modified. When the barracks now being constructed at Gebel Imtarfa are completed it is hoped there will be little or nothing to complain of in this respect, The rations supplied have generally been of good quality, but the colour of the bread has not been good, and representations have been made on the subject. As regards the hospitals, a new hospital to replace the present Valetta Station Hospital is stated by the Principal Medical Officer to be greatly needed, as well as an infectious hospital for women and children. The course of gymnastic training has been attended with good results, and the recreation rooms were most useful in keeping the men away from the low parts of the town.

The following are some of the sanitary improvements carried out during the year. Ventilation improved at Forts Salvatore, Manuel, Chambray, and Ricasoli. The surface drainage at San Francisco Barracks has been extended. Water has been laid on to Margherita Chapel School and St. James' Cavalier cook-house. A water cistern for drinking water has been fixed at St. Clement's and St. Nicholas Married Quarters, and at Zabbar Gate a new doorway has been opened for the improvement of sanitary arrangements.

ROYAL MALTA ARTILLERY.

The average strength of the Royal Malta Artillery was 371 non-commissioned officers and men, and the chief statistics of their sickness and mortality are shown in the following table :—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
371	197	—	—	—	—	9	8·20	531·0	—	—	24·26	22·10

Compared with corresponding ratios in the previous year a decrease of 60·7 per 1,000 is observed in the admission ratio and one of 2·74 in the death rate, but there is an increase of 1·89 in the rate of constantly sick; and compared with similar average ratios for the previous ten years the admission rate has declined by 124·2, the death rate by 3·67, and the constantly sick rate by 2·35.

The average sick time to each soldier was 8·09 days, an increase of ·71 of a day over previous year, but less than previous decennial period by ·83 of a day. The average duration of each case of sickness was 15·23 days, an increase of 2·76 days over previous year, and of 1·61 days over previous decennial period.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—The number of cases admitted for fever is slight; there were 22 cases of *simple continued fever*, giving an admission ratio of 59·3 per 1,000. The cases were mild, and there were no deaths. There were no cases of *enteric fever*. There were no

Malta.

cases of *malarial fever* or of *septic diseases*. *Venereal diseases* show little change, the admission ratio was 40·4. There were 3 cases of *primary syphilis*, 3 of *secondary syphilis*, and 9 of *gonorrhœa*. *Parasitic diseases* caused one admission, a case of tænia solium. There were 12 admissions for *debility*, some of them being men of long service. There were 9 cases of *rheumatism*, all of a mild nature; 3 cases of *tubercle of the lungs*, and one of *non-malignant cyst*.

LOCAL DISEASES.—There was 1 case of mania, which was treated in the Lunatic Asylum. There were 9 cases of conjunctivitis, 2 of heart disease 2 of varicose veins, and 1 of aneurysm.

Diseases of Respiration caused 26 admissions, 22 of these being for bronchitis.

Diseases of Digestive System caused 10 admissions, 4 being for sore-throat, and 3 for diarrhœa. *Diseases of skin* caused 24 admissions, the majority of cases being for boils.

Injuries caused 48 admissions, all cases being of a trivial nature.

Invaliding.—There were 9 men invalided, being in the ratio of 24·26 per 1,000. Four of these had over 20 years' service, and were quite worn out. The other cases were tubercle of lung 2, mania 1, rheumatism 1, and ankylosis 1.

Officers.—The strength was 20, and there were 17 cases of sickness. There were no deaths. Eight of the cases were for simple continued fever.

Women.—The average strength was 41, and there were 13 admissions, five being for fever, and two deaths, both from simple continued fever.

Children.—Average strength 127, and there were 74 cases of sickness and 11 deaths. Measles, 22 cases; bronchitis, 10; and diarrhœa, 16, were the principal causes of sickness. The deaths were 4 from diarrhœa, 3 each from teething and debility, and 1 from measles.

Sanitary Conditions.—There are no special sanitary improvements noted.

III.—CYPRUS.

Cyprus.

The force serving in Cyprus during the year was composed of the head quarters and four companies of 2nd Battalion, Essex Regiment, who left the island in October,—the head-quarters and four companies of the 2nd Battalion, Connaught Rangers, who arrived from Malta in relief of the Essex Regiment, and the garrison staff and departments.

The principal statistics of sickness and mortality among the troops are shown in the following table:—

1892. Average Strength	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
531	380	3	1	4	27	4	20·99	715·6	7·53	50·84	7·53	39·53

Comparing these statistics with those of last year, it appears that whilst there is a decrease of 23 in the actual strength, there is an increase of 69 in the number of men admitted, and an increase of 2 in the deaths. The ratio of admission shows an increase of 154·3; that of deaths, 3·92; and that of constantly sick, 12·38 per 1,000 on the year 1891, while compared with the average for the previous ten years all these ratios have declined, by 113·6, 1·15, and 2·73 respectively. The average sick time to each soldier 14·46 days shows an increase of 4·55 days, and the average duration of each case of sickness, 20·22 days, one of 2·57 days. The increased number of admissions

Cyprus.

is due to venereal disease and debility, the result of climate. The increase in the constantly sick was due to the prolonged treatment of some cases of constitutional syphilis in Hospital.

The stations occupied were Polymedia, Limassol, Nicosia, and Troodos. The two former were occupied twice during the year. All the troops were stationed at Mount Troodos from June till September.

In Abstract XL. is a table showing the sickness and mortality by corps in the Command. On account of the small average strength of the garrison staff and departments useful comparison with the Infantry cannot be made, but, compared with a similar table for the previous year, it will be observed that the ratios of admission and mortality for the Infantry have increased, while the admission rate for the garrison staff and departments has declined. There was one death in the latter as compared with *nil* in 1891.

As regards the age of the troops, it is found that in soldiers under 20 years, the admission rate per 1,000 is 75·7, being a decrease of 176·5 on previous year. From 20 to 25 years a ratio of 1,100·7, being an increase of 297·0 on the previous year. From 25 to 30 years a ratio 350·7, being a decrease of 73·5; from 30 to 35, and from 35 to 40, the ratios were 321·4 and 181·8 respectively. Over 40 years there were no admissions. Of those who died in the Command two men were between 20 and 25 and the other over 30 years of age. Taking length of service in the Command, the highest ratio of admission was in men between 4 and 5 years' service. Of the deaths one man had under one year's service, one under two, and one over three years' service in the Command.

The admissions, deaths, invaliding, &c., according to the different groups and orders of diseases will be found in Abstract IV.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—There were 59 admissions under this head, 55 for *simple continued fever*, being six more than in 1891. This fever, next to venereal affections is the chief cause of inefficiency amongst the troops. It is most prevalent in October and November, and resembles in type the general fever prevailing in the Mediterranean, it is probably of a specific origin and fostered by climatic conditions.

No case of enteric fever occurred during the year. There were 3 admissions for influenza and 1 for dysentery.

Malarial Fevers.—There were 7 admissions under this head, being two more than last year.

Venereal Diseases.—*Primary syphilis* caused 9 admissions, *secondary syphilis* 13, and *gonorrhœa* 73. The ratio per 1,000 for primary syphilis was 16·9 which is somewhat below the rate for the previous year. Including simple venereal ulcer, the admission ratio for primary venereal sores was 45·1, being less than the previous year by 19·9. Secondary syphilis gave an admission ratio of 24·5 per 1,000, being an increase of 13·7 over previous year. Gonorrhœa gave an admission ratio of 137·5, an increase of 72·5 over previous year. Including all forms of venereal disease, the total admission ratio was 207·1, and that of constantly sick 13·60, per 1,000, as compared with 140·8 and 9·56 in previous year. These figures show a considerable increase over the returns for the previous year, and the Senior Medical Officer advises the formation of a lock hospital and the institution of the Contagious Diseases Act.

Debility caused 32 admissions, a ratio per 1,000 of 60·2. This is a marked increase over last year, when the ratio was 23·5.

Rheumatism.—The admissions for this cause were below the average. The remaining admissions in this group of diseases were two cases of non-malignant new growth.

LOCAL DISEASES.—*Diseases of the Nervous System* gave 1 admission for megrim. *Diseases of the eye* gave 8 admissions, an increase of 5 admissions over previous year. *Diseases of other organs of special senses*, 2 admissions. *Diseases of the circulatory system* shows an admission rate of 20·7 per 1,000, being an increase of 18·9 over previous year. There were two deaths, one from syncope, and the other in an invalid, from valvular disease of heart. There were only 9 admissions for *diseases of the respiratory system*, an increase over previous year. *Diseases of the digestive system* gave an admission rate of 54·6 per 1,000, being a decrease of 17·6 on the previous year. One case of hernia terminated fatally after operation, and one case of hepatitis also proved fatal. *Cyprus.*

Diseases of the lymphatic and glandular system consisted mostly of cases of bubo, but not of specific origin. The admission rate, 35·8, is practically the same as for last year. *Diseases of the urinary system* gave only 5 admissions for incontinence of urine.

Diseases of the generative system caused an admission ratio of 43·3, principally due to simple venereal ulcer; this is a decrease of 10·8 as compared with last year. *Diseases of the organs of locomotion* caused six admissions, 5 being for synovitis.

Diseases of the connective tissue gave 14 admissions mostly for abscess. *Diseases of the skin* gave an admission rate of 41·4 per 1,000, a decrease of 7·3 as compared with last year. The cases were mostly due to boils.

Injuries.—There were 28 admissions equal to a ratio of 52·7 per 1,000, an increase of 4·0 over previous year. Two of the cases were for fracture, the remainder were of minor importance.

Invaliding.—The number of men invalided home was 27, or a ratio per 1,000 of 50·84, this is a considerable increase, 40·01 over last year's rate and of 37·18 on the decennial average rate. It is due to the 2nd Battalion Essex Regiment sending home men found unfit for service in India on leaving the island for that country. Twenty of the invalids were between 20 and 25 years of age, six were between 25 and 30 years, and one was over 30 years. Four had less than one year's service in the Command, nine were in their second year, six in their third year, and eight were over three years. The causes were chiefly debility, 11 cases, palpitation 5, and secondary syphilis 4. Of the whole number 24 were sent home for change of climate and 3 for final discharge. The number of men discharged the service by invaliding was 4, equal to a ratio of 7·53 per 1,000, which is lower than that in the previous year by 1·49, but higher than the decennial average rate by 2·07. The disabilities necessitating final discharge were ametropia, hepatitis, Bright's disease, and synovitis one case respectively.

Officers.—The average strength was 22, and there were 12 admissions, and one death from heart disease. One officer was invalided for loss of an eye, the result of a blasting accident. The ratio of admissions was 545·4, an increase of 154·1 over last year.

Women.—The average strength was 28, and there were 13 admissions. This gives a ratio of 464·3 per 1,000, an increase of 233·5 over last year. There was no special cause for this increase. One death occurred from premature labour.

Children.—The average strength was 48, and the admissions were 26. The ratio per 1,000 was therefore 541·7, a considerable increase, 381·7, over last year. This is principally due to simple continued fever and bronchitis.

Sanitary Conditions.—The Senior Medical Officer, Brigade Surgeon Lieut-Col. W. E. Riordan reports that the general health of the troops was satisfactory. There was a greater loss of efficiency from sickness, but this he considers due to the fact of a regiment having been brought from Malta, many of the men being already debilitated by residence in the Mediterranean. A new building has been constructed at Polymedia for the disinfection of clothing and bedding. The water supply is of good quality and sufficient. At Nicosia some improvement has been made in the surface drainage. At Troodos, the construction of huts has been commenced for the accommodation of the troops instead of keeping the men under canvas. A new cook-house was being erected. The dry-earth system of conservancy is effectually carried out.

IV.—ON THE HEALTH OF THE TROOPS SERVING IN THE DOMINION OF CANADA.

Sickness and Mortality.

Canada.

The average strength of the garrison at Halifax, the only station in Canada occupied by Imperial troops, was 1,392. The force was composed as follows:—The 3rd Company, Western Division, Royal Artillery, for the whole year, detachment 17th Company, Western Division, Royal Artillery, from 1st January to 2nd April, when it embarked for England. The 18th and 40th Companies (Submarine Miners) Royal Engineers, and 1st Battalion Leicestershire Regiment for the whole year, also detachments of departmental corps.

In the subjoined table are given the most important of the health statistics of the troops:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
1,392	631	1	1	2	10	8	25·51	453·3	1·44	7·18	5·75	18·32

Compared with last year's ratios an increase of 80·5 is seen in the admission rate, a decrease of 4·17 in death rate, and an increase of 1·21 in constantly sick.

The average sick time to each soldier was 6·71 days, an increase of ·46 over the previous year, but less than the corresponding period for the previous ten years by 5·41 days. The average duration of each case of sickness was 14·80, being less than the previous year by 1·95 days, and less also than the average decennial period by 5·34 days.

In Abstract XL. are given the principal statistics of separate corps. The highest annual admission rate was 597·5 in the 3rd Company, Western Division, Royal Artillery, and the lowest was 347·80 in the 18th Company Royal Engineers. The highest ratio constantly sick was 27·89 in the 3rd Company, Western Division, Royal Artillery, and the lowest, 11·64, in the 40th Company Royal Engineers.

The only death that occurred was that of an old non-commissioned officer, who died suddenly from heart disease out of hospital, the ratio of mortality, ·72, being the lowest ever recorded in the Command.

The effect of age on sickness and mortality shows that the admission rate among men under 20 years of age was 847·4 per 1,000, between 20 and 25 years it was 511·5, between 25 and 30 years 368·3, and over 30 years 338·9. In the previous year, also, the admission rate was highest in those under 20 years of age.

As to effect of length of service, the admission ratio amongst men in their first year was 705·2, a considerable increase over last year, which was 433·3. In their second year 359·0 as compared with 310·1 in 1891, in their third year 528·3 as compared with 269·0, and over three years 231·4 as to 236·6 in previous year.

The sickness, mortality, and invaliding, according to the different groups and orders of diseases, are shown in Abstract V.

Canada.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*— Sub-group 1. The total admissions in this sub-group were 13, of which 4 were for *eruptive fevers,* 2 being scarlet fever of a mild type. There were 8 cases of *influenza,* being four less than last year. One case was returned as *yellow fever,* in a man of the Royal Artillery, transferred to hospital from a troopship just arrived from the West Indies. There were no admissions for *enteric fever.*

Sub-group 2. *Malarial Fevers.*—There were 9 admissions, of which 7 were for ague and 2 were for remittent fever. The latter cases were severe, and occurred in men of the Royal Artillery recently arrived from the West Indies.

Sub-group 3. Only one admission, a case of *erysipelas.*

Venereal Diseases.—For *primary syphilis* there were 24 admissions, equal to a ratio of 17·2 per 1,000, being a decrease of 3·9 as compared with 1891. Including simple venereal ulcer the admission ratio is 23·0 per 1,000, being higher by 1·9 than the previous year, but less than the sexennial average by 12·3.

Secondary Syphilis caused 16 admissions, a ratio of 11.5 per 1,000, an increase of 1·7 over last year, but below the sexennial average by 13·7.

The admissions for *gonorrhœa* were 62, giving a ratio of 44·5, an increase of 5·2 over 1891, but less than the sexennial average by 21·3.

Including all forms of venereal disease the total admission rate was 79·0 per 1,000, an increase of 8·8 over previous year, but less than the sexennial average by 47·3.

The ratio constantly sick was 4·26, a very slight increase over last year, but below the sexennial average by 3·93.

Alcoholism caused 5 admissions as compared with 1 in preceding year, and as in 1891 there was 1 case of delirium tremens.

Rheumatism.—There were 28 admissions, equal to a ratio of 20·1 per 1,000, which is below the previous year by 4·5 and the sexennial average by 12·4. There was only one case of rheumatic fever as compared with 8 in 1891, and four of the admissions were for gout. The remaining admissions in this group were 6 for non-malignant new growth, 1 tubercle of lungs, and 1 anæmia.

LOCAL DISEASES.—*Diseases of the Nervous System.*—Ten admissions are recorded, equal to a ratio of 7·2 per 1,000, being ·9 over previous year, and below the average for previous six years by 2·9. There was one case of epilepsy.

Diseases of the Eye caused 4 admissions, and of the *ear* 6, giving a ratio of 7·2 per 1,000 for diseases of organs of special senses.

Diseases of the Circulatory System.—There were 7 admissions, being a ratio of 5·0, below that of the previous year and the sexennial average rate by 1·3 and 6·7 respectively. There were 3 cases of valvular disease of heart, 1 of pericarditis, 2 of palpitation, and 1 of fatty degeneration.

Diseases of the Respiratory System.—The admission rate was 31·6 per 1,000, an increase of 7·0 over previous year, but 6·3 lower than sexennial average. Among the 44 admissions, 37 were for bronchial affections, 1 for pneumonia, and 3 for pleurisy.

Diseases of the Digestive System.—There were 127 admissions, giving a ratio of 91·2. This is largely in excess of the previous year's rate by 36·4, and greater than the average rate for the preceding six years by 24·0. The increase is mainly due to the large number of cases of follicular tonsillitis.

Diseases of the Lymphatic and Glandular System.—28 admissions are shown, or a ratio of 20·1, being an excess of 4·6 over previous year, and of 6·8 over previous sexennial period.

Diseases of the Generative System.—There were 35 admissions, or a ratio of 25·2, an increase of 13·3 over previous year.

Diseases of the Urinary System.—There were 3 admissions, all for albuminuria, giving a ratio of 2·2.

Diseases of the Organs of Locomotion.—14 admissions, 10 being for synovitis, giving a ratio of 10·1, in excess of the previous year's rate and of the average rate.

Diseases of the Connective Tissue gave 18 admissions, or a ratio of 12·9, which is less by 3·3 than the previous year's rate, and by 7·4 than the average.

Canada.

Diseases of the Skin caused 47 admissions, an increase of 9·2 per 1,000 over previous year's rate, mainly due to a large proportion of cases of itch.

Poisons.—There were two admissions under this head, one from eating bad tinned salmon, and the other from oxalic acid. Both recovered.

Injuries caused 117 admissions, a ratio of 84·1, being 18·1 higher than in the previous year, and 16·4 above the sexennial average rate. The largest causes of admission were sprains 34, contusions 29, and fractures 10.

Invaliding.—The number of men invalided home during the year was 10, being in the ratio of 7·18 per 1,000, which is below the corresponding rate for the previous year by ·54, and lower than the previous decennial ratio by 13·34.

With regard to age it is observed that none of the invalids were under 20 years of age, 4, or 6·13 per 1,000, were from 20 to 25 years, 3, or 5·33, from 25 to 30, and 3, or 25·42, were above that age. The ratio of invaliding in men under one year's service in the Command was 11·56, in men in their second year 5·2, in the third year *nil*, and above that service 16·53.

The causes of invaliding were albuminuria 2, synovitis, 2, and one each for debility, rheumatism, epilepsy, vertigo, pericarditis, and fatty degeneration of heart.

The number of men finally discharged the service was 8, or a ratio of 5·75 per 1,000, a decline of 6·89 from the last year's rate, and below the decennial average rate by 12·04. The diseases necessitating discharge were tubercle of lung 3 cases, and epilepsy, retinitis, fatty degeneration of heart, Bright's disease, and synovitis one case respectively.

Officers.—The average strength was 60, and there were 23 cases of sickness, the ratio being 383·3, a decline of 194·8 as compared with 1891. The cases were generally of a mild nature.

Women.—The average strength was 126 and there were only 7 admissions, or a ratio of 55·5 per 1,000, being much below, by 64·5, the previous year. One death occurred from inflammation of the cerebral membranes.

Children.—Average strength 227 with 48 admissions, or a ratio of 211·4 per 1,000. This is much above, by 61·2, the previous year's rate. The principal causes of admission were, chicken-pox, diarrhœa, scarlet fever, and catarrhal bronchitis. Three deaths occurred, two from infantile convulsions, and one from diarrhœa.

Sanitary Conditions.—The Principal Medical Officer, Surgeon-Colonel S. Archer, reports that the sanitary condition of the quarters generally is satisfactory, though many of the buildings are old and faulty in construction. There has been no overcrowding. Ventilation is effected chiefly by open fireplaces and opposite windows, but the question of satisfactory ventilation is difficult in a climate where changes of temperature are so great and so sudden. There have been several complaints as to the warming of barrack-rooms. There is likely to be an improvement when the new system of fuel issues is better understood.

The drainage is generally satisfactory. The water supply is good and ample. The lighting of barracks is still carried out by kerosine oil lamps, and is not satisfactory. The rations have been of good quality, and mutton has been issued twice a week, from 1st January to 15th February, from 16th September to 31st October, and three times a week during November and December. Beef is supplied at other times.

Cooking.—For some of the cook-houses old-fashioned boilers and ovens exist, but these are gradually being replaced by modern apparatus.

In the station hospital the accommodation is good and ample, and ventilation and lighting are satisfactory. The system of warming by hot water pipes has been extended to the whole building, which is a marked improvement.

The chief sanitary improvements during the year were as follows:—The completion of the hot water warming apparatus for the station hospital. Storm sashes and double doors provided for some of the barrack rooms in the Citadel, also additional latrine accommodation. The latrines in the hospital, Glacis Barracks, and gymnasium have been converted into dry-earth closets.

V.—ON THE HEALTH OF THE TROOPS SERVING IN BERMUDA.

Sickness and Mortality.

Bermuda.

The average strength of warrant officers, non-commissioned officers and men was 1,363, a decrease of 238 as compared with the previous year. The force comprised No. 1 Company, Western Division, Royal Artillery, the 27th and 36th Companies, Royal Engineers, the 1st Battalion, the King's Liverpool Regiment, the detachments Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff.

In the following table are the principal statistics of sickness and mortality among the troops during the year:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
1,363	688	10	2	12	15	6	34·75	504·8	8·80	11·00	4·40	25·49

Compared with corresponding ratios in the preceding year, an increase of 22·0 per 1,000 is observed in the admission rate, one of 5·68 in the death rate, and one of ·07 in that of constantly sick; and compared with average similar ratios for the previous 10 years, the decrease in admission rate was 95·8, in the mortality rate 1·31, and in constantly sick 5·92.

The average sick time for each soldier was 9·33 days, for the previous year 9·28 days, and for the previous decennial period, 11·46 days.

The average duration of each case of sickness was 18·49, in the previous year 19·21, and previous ten years 19·00 days.

In Abstract XL. is given a table showing the sickness and mortality in the different Corps which served in the Garrison during the year. The rates for the Royal Artillery, principally stationed at St. George's, were 692·0 for admissions and 27·64 per 1,000 for constantly sick. The Royal Engineers, 27th Company, gave ratios of 515·2 and 28·03, and the 36th Company, Royal Engineers, of 380·0 and 27·20 respectively.

The King's Liverpool Regiment showed a ratio of 482·5 admissions and 25·76 per 1,000 constantly sick, whereas in the previous year the admissions were 541·2 per 1,000 and the constantly sick 25·88. The general health of this regiment was very good.

The highest death rate was 20·00 per 1,000 in the 36th Company Royal Engineers, closely followed by 19·01 in the Royal Artillery; 2 of the 5 deaths in the latter were from suicide. There was a death rate of 5·83 in the King's Liverpool Regiment from 5 deaths.

As to the age of the men, in those under 20 years of age the admission ratio was 736·8 per 1,000, between 20 and 25 years 574·8, between 25 and 30 years 333·3, and over 30 years 360·3, the corresponding numbers for the previous years being 717·2, 533·9, 386·9, and 248·4 respectively. Of the deaths in the country, 4, or 4·83 per 1,000, were amongst men between 20 and 25 years of age, 3, or 8·62 per 1,000, between 25 and 30 years, and 3, or 27·03 per 1,000, of over 30 years.

As regards the influence of length of service in the Command, it is seen that the admission rate amongst men in their first year of service was 851·7 per 1,000, in those in their second year 447·3, in the third year 390·1, and in those

Bermuda.

over 3 years' service in the Command 292·9, whilst the corresponding numbers for the previous year were 515·2, 411·8, 419·7, and 308·8. As regards mortality, 1 death, or 3·80 per 1,000, occurred in those under one year's service in the country, 5, or 6·42 per 1,000, amongst those in their 2nd year, and 4, or 17·94, among men in their third year.

In Abstract VI. will be found a table giving the statistics of sickness and mortality according to the different groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—There were no admissions for eruptive fever, but *enteric fever* caused 22 admissions and 6 deaths, being in the ratios of 16·1 and 4·40 per 1,000. As compared with corresponding ratios of the previous year, this shows a diminution of ·8 in the admissions and an increase of 1·28 in the mortality. The ratios for the previous six years show 39·2 for admissions, and 6·20 for mortality per 1,000.

The per-centage of mortality to attacks was 27·27 as compared with 18·52 in the previous year. In his remarks the Senior Medical Officer states that of the 22 cases of enteric fever 13 were treated in the Station Hospital at Prospect, 4 at St. George's, and 5 at Watford. Of these cases, 8 have been clearly traced to Warwick Camp, and 3 other cases are very probably due to residence in that locality. Owing to the small amount of good level ground available for pitching camp here, the tents have often remained for a considerable time on the same spot, and the ground gets easily soiled and foul. He recommends the erection of wooden huts, and meanwhile that the tents be changed to new ground at least once a fortnight. The latrines in the town of Hamilton and at St. George's are simply cess-pits, and no doubt cause pollution of the drinking water, collected in many cases within a few yards of these pits. There are frequent cases of enteric fever amongst the civil population, and there is little doubt that some of the soldiers contract the disease away from Barracks. At the same time every effort must be made to keep the drinking water in camp pure, and to have the collecting areas and tanks in the towns carefully inspected.

Simple Continued Fever caused 15 admissions, giving a ratio of 11·0 per 1,000, as compared with 13·1 for the previous year. Of these cases, 8 occurred at Prospect, 4 at St. George's, and 3 at Watford.

Malarial Fevers gave one admission for ague and one for remittent fever. These diseases are not endemic here.

Venereal Diseases.—There were 9 admissions for *primary syphilis*, being a ratio of 6·6 per 1,000, as compared with 5·6 for the previous year.

Secondary syphilis gave 12 cases, or 8·8 per 1,000, whereas it was 21·9 per 1,000 in the previous year.

There were 19 admissions for *gonorrhœa*, or 13·9 per 1,000, being an increase of 2·0 over previous year.

The admission ratio for all forms of venereal disease amounted to 30·8 per 1,000, being lower than that for the previous year by 13·0 and 34·9 per 1,000 less than the average of the preceding six years. The total amount of constant inefficiency on account of these diseases being 3·47 per 1,000, or ·02 less than the previous year.

Parasitic Diseases caused 2 admissions, and there were 12 admissions for *alcoholism*, but none for delirium tremens. *Debility* showed 11 admissions, or 8·0 per 1,000, almost the same as the previous year.

Rheumatism gave 32 admissions, or 23·5 per 1,000, as against 10·6 for previous year.

Tubercular Diseases gave only one admission. This case was invalided home, and an invalid died after leaving the Command.

LOCAL DISEASES.—*Diseases of the Nervous System* gave 10 admissions (one being for mental disease), or 7·3 per 1,000, being 7·1 less than for previous year.

Diseases of the Eye gave 12 admissions, or 8·8 per 1,000, slightly less than in previous year. *Diseases of the Ear* caused 14 admissions, being 10·3 per 1,000, as against 3·8 for previous year.

Diseases of the Circulatory System caused 13 admissions, 3 being for valve disease of heart, 1 for dilatation, 5 for palpitation, and 4 for varicose veins. One death occurred from dilatation of the heart. The admission ratio was 9·5, being an increase of 7·0 over previous year.

Bermuda.

Diseases of the Respiratory System caused an admission rate of 19·8, as against 16·2 for the previous year. There were three cases of pleurisy, one of laryngitis, one of pneumonia, and one fatal of pneumonic phthisis; the remaining cases were ordinary bronchial affections.

Diseases of the Digestive System caused 136 admissions, giving a ratio per 1,000 of 99·8, as against 85·6 for the previous year. Diarrhœa and dyspepsia caused the largest proportion of admissions. There were no deaths or invaliding from this class of disease.

Diseases of the Lymphatic and Glandular System caused an admission ratio of 5·9 per 1,000, as against 6·9 in the previous year.

Diseases of the Generative System caused 16 admissions, or 11·7 per 1,000, against 16·9 in previous year.

Diseases of the Organs of Locomotion caused an admission ratio of 18·3, as against 13·1 in previous year. An invalid died from lumbar abscess. *Diseases of the connective tissue* gave a ratio of 19·1, as against 36·2 in the previous year. *Diseases of the skin* gave a ratio of 47·9, as compared with 46·2 in the the previous year.

Injuries caused 186 admissions, or 136·4 per 1,000, as compared with 119·9 for the previous year. Three cases were gun-shot wounds, two, fatal, being self-inflicted, and one during a quarrel.

Invaliding.—There were 15 invalids sent home, giving a ratio of 11·00 per 1,000, as compared with 14·99 for the previous year, and is lower also than the ratio for the previous decennial period by 4·67. In the Royal Artillery the ratio was 7·60 per 1,000, in the Royal Engineers 12·05, and in the Infantry 11·66. With regard to age, 1, or 13·15 per 1,000, was under 20 years, 7, or 8·45, from 20 to 25 years, 6, or 17·24, between 25 and 30 years, and 1, or 9·00, over 30 years of age. Twelve of the men invalided, or 15·42 per 1,000, were in their 2nd year of service in the Command, 1, or 4·48, in his 3rd year, and 2, or 20·20 per 1,000, over three years' service.

The principal causes of invaliding were 3 from local injuries, 2 from secondary syphilis, 2 from debility, and 2 from valve disease of the heart.

The number of men finally discharged as medically unfit gave a ratio of 4·40, being less than the previous year by 6·21, and than the average of the previous decennial period by 5·43.

Officers.—The average strength was 56, and there were 20 cases of illness, the ratio for admissions being 357·1, an increase of 85·7 over previous year. There were two cases of enteric fever, one of which proved fatal. Five cases were invalided, one from enteric fever, dysentery, sprain of the back, hepatitis, and inflammation of connective tissue respectively.

Women.—The average strength was 89 and the admissions 34, the ratio being 382·0 per 1,000, an increase of 35·5 over the previous year. There were no deaths, and diseases of digestion, debility, and anæmia were the principal causes of illness.

Children.—The average strength was 158, with 38 admissions, a ratio of 240·5 per 1,000, being less than last year's ratio by 250·4. There were 3 cases of scarlet fever, 4 of simple continued fever, and 10 each from diseases of respiratory and digestive systems. There were 2 deaths, one from enteritis and the other from diarrhœa.

Sanitary Conditions.—The Senior Medical Officer, Brigade-Surgeon, Lieutenant-Colonel H. Comerford, M.D., reports that the sanitary efficiency of the arrangements in the Command have been kept up, but no large schemes of ventilation or drainage have been carried out. Minor improvements, such as additional flushing apparatus, fresh waterclosets, and improved ablution arrangements have been effected. The new hospital was completed and handed over in May for occupation; a soldiers' block of the new barracks at Prospect was likewise taken into occupation. Three wooden huts have been erected, two at Warwick and one at Prospect. All these new buildings are in every way satisfactory, and a second block is under construction.

No change has taken place in the scale of the soldiers' diet; the cooking is varied, and the clothing suitable to the climate. The drainage is satisfactory, and the condition of the vicinities of camps, barracks, and hospitals is good.

VI.—ON THE HEALTH OF THE TROOPS SERVING IN THE WEST INDIES.

Sickness and Mortality.

I.—White Troops.

est Indies.

The average strength serving in the West Indies during the year was 1,201 warrant officers, non-commissioned officers and men. In the Barbados Command the average strength was 717, and in the Jamaica Command 484. The force in the Barbados Command was as follows:—

A detachment of No. 3 Company, Western Division, Royal Artillery, until March, when it left St. Lucia for Halifax, having been relieved from England by No. 18 Company, Western Division; the headquarters of the 2nd Battalion, Duke of Wellington's West Riding Regiment at Barbados, one company at St. Lucia, with details of Royal Engineers, Departmental Corps and Garrison Staff, quartered at Barbados and St. Lucia.

In the Jamaica Command the force comprised, the 10th Company, Western Division, Royal Artillery, 3 companies of the Duke of Wellington's West Riding Regiment, and detachments of Royal Engineers, Army Service Corps, Medical Staff Corps, Ordnance Store Corps, and the Garrison Staff.

The more important statistics of sickness and mortality among the troops in each division of the Command, as well as of those in the West Indies, taken as a whole, are shown in the subjoined table:—

1892.	Average Strength.	Admissions.	Deaths			Invalids	
			In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.
Barbados Command . .	717	957	3	1	4	29	17
Jamaica Command . .	484	299	8	—	8	9	7
West Indies . . .	1,201	1,256	11	1	12	38	24

(*continued.*)

1892.	Average constantly Sick.	Ratio per 1,000 of Strength.				
		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
Barbados Command . .	65·05	1334·7	5·58	40·45	23·71	90·72
Jamaica Command . .	20·61	617·8	16·53	18·59	14·46	42·58
West Indies . . .	85·66	1045·8	10·00	31·64	20·00	71·32

West Indies.

As regards the Barbados Command, on comparing the statistics with those of the previous year, it is seen that the ratio of admission is decreased by 297·6 per 1,000, the death rate by 5·51, and the constantly sick rate by 4·87. The average sick time to each soldier, 33·20, is shorter by 1·69 days, and average duration of each case of sickness, 24·88 days, is shorter by 3·51 days.

In the Jamaica Command there is also a decrease in the ratios of sickness and mortality, as compared with the previous year, the admission rate being less by 158·5, the death rate by ·67, and the constantly sick rate by 5·72. The average sick time to each soldier was 15·58 days, a decrease of 2·05, and the duration average was 25·23, a decrease of 2·52.

Taking all the troops in the West Indies together, the ratio of admission is decreased by 223·3 per 1,000 as compared with the previous year, the death rate by 3·69, and the constantly sick rate by 4·21. In comparison with the corresponding ratios for the previous ten years, a decrease of 13·5 and ·10 is observed in the admission and death rates respectively, but an increase of 16·47 occurs in the rate of those constantly sick. The average sick time to each soldier was 26·10 days, a decrease under previous year of 1·47, but higher by 6·08 than the previous decennial period. The average duration of each case of sickness was 24·96 days, an increase over previous year of 3·24 and of 6·02 over period for previous ten years.

In Abstract XL. will be found a table showing the most important of the statistics of sickness and mortality of the different corps which served in the West Indies during the year.

In the Barbados Command, No. 18 Company, Western Division, Royal Artillery at St. Lucia for ten months, gave an admission rate of 1726·2 per 1,000 and a constantly sick rate of 116·90. There were 3 deaths in the Artillery, one in No. 3 Company, Western Division, one in No. 18 Company, Western Division, at Barbados, and one at St. Lucia. The headquarters of 2nd Battalion, Duke of Wellington's West Riding Regiment, gave an admission rate of 1352·2 per 1,000. There were no deaths.

At Jamaica, the 10th Company, Western Division, Royal Artillery, gave an annual admission rate of 738·3 per 1,000, a death rate of 56·08, and a constantly sick rate of 45·70. There were 6 deaths. The three companies of Duke of Wellington's West Riding Regiment gave an admission rate of 594·7, a death rate of ·33 and constantly sick rate of 43·95. There was only one death.

The sickness and mortality according to the age of the men show that the admission rate in men under 20 years of age was 1060·6, as contrasted with 767·9 in previous year. In men between 20 and 25 the rate was 1284·9 as against previous year 1679·7. In men from 25 to 30 the rate was 909·1, or slightly less than in 1891. In those over 30 years the rate was 671·2, almost the same as in previous year. There was no mortality among men under 20 years of age, but 3 deaths, or 5·81 per 1,000, occurred in men from 20 to 25 years, as against 15·21 in previous year. For those from 25 to 30 the death rate was 9·88, or much the same as previous year, and in those over 30 the rate was 20·55 as against 16·81.

With regard to length of service in the Command, the admission ratio amongst men in their first year of service was 1529·1, an increase over previous year, when it was 1396·1. In those in their second year it was 878·3, or nearly one half less than in previous year. In the third year it was 611·1, nearly the same as previous year, and in those over 3 years it was 240·0 as against 1281·7 in previous year, a very marked decrease. Of the deaths, 4, or 10·58 per 1,000, occurred amongst those in their first year's service in the Command, this is more than double the rate of the previous year, which was 4·48. Three deaths occurred in those in their second year of service, a ratio of 4·35, showing a marked decrease below the previous year's rate, which was 26·45. Four deaths took place in the third year of service, a rate of 37·04, an increase over previous year, and there were no deaths amongst those of over three years' service in the Command.

In Abstract VII. will be found the most important of the statistics of sickness and mortality arranged according to the different groups and orders of diseases.

West Indies.

General Diseases.—*Diseases dependent on Morbid Poisons.*—Under the head of *eruptive fevers* a single admission for chicken-pox is recorded.

Enteric Fever caused 5 admissions and 3 deaths. The ratio of admission, 4·2 per 1,000, is less by 9·5 than in the previous year, and below the six years' average rate by 8·3, the death rate, 2·50, is also slightly lower than in the previous year, but fractionally higher than the sexennial average rate. The percentage of mortality to attack was 60·0, as against 20·0 for previous year, and 18·52 for the previous six years. All the cases occurred in Jamaica, three being at Up Park Camp, one at Port Royal, and one at Newcastle; no special cause for the disease is assignable.

Other Continued Fevers caused 47 admissions, or a rate per 1,000 of 39·1, a decrease of 85·9 below previous year, and of 72·0 below previous six years' average. Thirteen cases occurred in Jamaica, and 34 in the Barbados Command.

Yellow Fever caused 3 admissions and 1 death. All the cases were in Jamaica. The disease began at the end of 1891, and extended into the early months of the year. It showed no tendency to spread, and every possible sanitary precaution was taken.

Dysentery caused 3 admissions, 2 at Jamaica and one at Barbados; the ratio of admission 2·5, being 6·6 less than in previous year. There were no deaths. The remaining admissions in this sub-group of diseases were 7 of influenza and 1 of mumps.

Malarial Fevers.—There were 62 admissions from this cause, 8 in Jamaica and 54 in the Barbados Command. Of these latter, 6 only were in Barbados, and 48 at St. Lucia. The ratio per 1,000 of admission was 51·6, a decrease of 59·7 below the previous year, but an increase of 7·2 above the previous six years' rate.

Venereal Diseases.—The admissions for *primary syphilis* were 53 in number, giving an admission rate of 44·1, being slightly less than in previous year. Including simple venereal ulcer, the admission rate was 125·7, and the constantly sick rate 9·76, showing a considerable decrease below the previous year's rates, which were 186·1 and 15·53 respectively; there is also a slight decrease below the corresponding ratios for the previous six years. In the Barbados Command, the admission and constantly sick rates for primary venereal sores were 161·8 and 12·56 respectively, a marked decrease below the previous year. In Jamaica, these rates were 72·3 and 5·60 respectively, as compared with 71·0 and 7·59 in the previous year. The admissions for *secondary syphilis* were 58 in number, and there were 7·35 men constantly sick. The admission rate, 48·3 per 1,000, while fractionally below the previous year's ratio is higher than the average of the previous six years by 15·1; the constantly sick rate is higher in both these comparisons by 1·91 and 2·84 respectively. In the Barbados Command the admission rate was 58·6, and the constantly sick rate 7·46 as compared with 49·1 and 4·50 in previous year. In Jamaica the ratios were 33·1 and 4·13 as compared with 47·3 and 3·81 in previous year.

Gonorrhœa caused 199 admissions, and an average of 16·74 men constantly sick, being in the ratios of 165·7 and 13·94 as against 178·8 and 13·95 in previous year, and 146·0 and 9·93, the average of the previous six years. In the Barbados Command the admission and constantly sick rates were 237·1 and 19·85, almost identical with the rates for previous year, and in the Jamaica Command they were 59·9 and 5·18 as against 98·9 and 7·25. Including all forms of venereal disease, the total admission rate was 339·7, and total constantly sick rate 29·82 per 1,000, being a decrease below the previous year's rates of 73·6 and 3·87 respectively, but an increase of 24·5 and 6·15 over the average ratios for previous six years. In the Barbados Command the total admission and constantly sick ratios were 457·5 and 39·87, as against 557·8 and 44·77 in previous year and in Jamaica the corresponding ratios were 165·3 and 14·91, as against 217·2 and 18·65 in 1891.

There were 11 admissions for *alcoholism*, and 20 for *debility*.

Rheumatism caused 55 admissions and no deaths, the ratio per 1,000 being 45·8, an increase of 11·1 over previous year. There were 2 cases of *tubercular disease of the lung*, and an invalid died from this disease after leaving the Command. Other diseases of this group caused 9 admissions, and there was one death from anæmia.

LOCAL DISEASES.—*Diseases of the Nervous System* caused 21 admissions, giving a rate of 17·5 or an increase of 2·0 per 1,000 over previous year. There was one death from apoplexy.

Diseases of the Eye gave 15 admissions, being a ratio of 12·5 per 1,000, much the same as for previous year.

Diseases of other Organs of Special Senses gave an admission rate of 20·8, a slight decrease below previous year's rate.

Diseases of the Circulatory System caused an admission rate of 8·3, or much the same as in previous year, but below the sexennial average rate by 3·7. There were two deaths, both in Jamaica Command, 1 for aneurism of aorta, and 1 for valvular disease of heart. *Diseases of the respiratory system* caused 37 admissions, or an admission rate of 30·8, a decrease of 9·4 below previous year, and below the sexennial average rate by 2·9. There were no deaths.

Diseases of the Digestive System caused 100 admissions, giving a ratio per 1,000 of 83·3, a decrease of 69·1 below the previous year, and of 32·1 below previous six years' rate. There was one death at Barbados from congestion of the liver. *Diseases of the lymphatic and glandular system* gave an admission rate of 45·0, an increase of 8·5 over previous year, and 4·1 above the average rate.

Diseases of Urinary System caused only 1 admission. *Diseases of the generative system* caused 131 admissions, or an admission ratio of 109·1 per 1,000, being less by 38·7 than in previous year, and by 5·2 than the previous six years' rate. Most of the cases were due to simple venereal ulcer.

Diseases of the Organs of Locomotion caused 11 admissions, or a rate of 9·1 per 1,000, and *diseases of the connective tissue* one of 55·0, being an increase of 16·7 over rate for previous year.

Diseases of the Skin caused 98 admissions or 81·6 per 1,000, a decrease of 23·2 below the rate for previous year, but below the average rate of the previous six years by 1·2.

Injuries.—The admissions were 140 in number or a ratio of 116·6, a slight decrease below the previous year.

Invaliding.—The number of men invalided home from the West Indies was 38, equal to a ratio of 31·64 per 1,000, being an increase of 13·39 over previous year, and of 9·99 over previous decennium. The invaliding rate from the Barbados Command was 40·45 as against 20·60 in previous year, and from Jamaica 18·59, as against 15·05 in previous year. Of the men invalided, with regard to age, one was under 20 years, 21 were between 20 and 25 years, 12 of from 25 to 30, and 4 over 30 years of age. The ratios being 30·30, 26·14, 12·99, and 16·81 respectively.

With regard to service in the Command, 9 men, or 23·81 per 1,000, were under 1 year's service, 26, or 37·68, in their second year, 2, or 18·52, in their third year, and 1, or 40·00, over 3 years' service.

The causes of invaliding were one each for enteric fever and dysentery, 3 for secondary syphilis, 2 for debility, 2 for tubercle, 1 for rheumatism, 1 for injury, and 1 for malarial fever, and 26 for local diseases.

The number of men discharged the service during the year as medically unfit was 24, equal to a ratio of 20·00 per 1,000, as against 9·12 in previous year, and 12·37 in previous decennium.

The principal causes necessitating discharge were diseases of the circulatory system 4 cases, eye diseases 3, tubercle 2, hernia 2, &c.

Officers.—The average strength was 116, of which 53 were in the Barbados Command, and 63 in Jamaica. The attacks were 22 in the former and 33 in the latter, a total of 55, giving an admission ratio of 474·1 per 1,000, a marked decrease of 315·8 below the previous year. There were no deaths, and the invaliding rate was only 8·62 as against 42·02 in the previous year. The principal causes of sickness were simple continued fever, ague, dysentery, and local injuries.

Women.—The average strength was 89, and the admissions 41, giving a ratio per 1,000 of 460·7, less by nearly one-half than in previous year. There

West Indies.

were 2 deaths, 1 at Barbados from enteric fever, and 1 at Jamaica from yellow fever.

Children.—The average strength was 165, of which 74 were at Barbados and 91 at Jamaica. There were 27 admissions in the former and 55 in the latter. The ratio per 1,000 being 497·0, a marked decrease of 368·2 below the previous year's rate. There were 2 deaths at Barbados from infantile convulsions, and no deaths in Jamaica.

The principal causes of sickness were simple continued fever, diarrhœa, convulsions, influenza, and whooping cough.

Sanitary Conditions.—The Senior Medical Officer of the Barbados Command reports that the general health has been good, venereal cases being the principal cause of admission both in Barbados and St. Lucia. In Barbados the water supply is good, the clothing suitable, and there is a fair amount of recreation for the troops, but the erection of a gymnasium is much to be desired. A new system is under consideration for the improvement of water-closets and urinals. A new staircase to the officers' mess has been built, and various minor improvements made in barracks and the station hospital. At St. Lucia a new mess house and quarters for five officers has been completed; the old military hospital has been taken over from the Colonial Government and temporarily fitted up for 41 beds. A block of quarters for married soldiers is being erected. At Vigie and La Toc raised verandahs have been provided for the hutments; the area of clearances has been increased, and several unhealthy swamps have been trimmed and drained.

At Jamaica a scheme of filtering all water supplied to Up Park Camp is about to be carried out by the civil authorities, who propose to establish a general system of filtration at the waterworks close to the camp. The medical officer in charge thinks this will be highly beneficial to the health of the troops as enteric fever is lurking about. A large block of barracks has been taken over and occupied at Up Park. Barrack accommodation for the Medical Staff Corps is much required. A detached infectious hospital has been completed during the year, and the open ground in front of the station hospital is being planted with shrubs and flowers. At Newcastle barrack accommodation for the Medical Staff Corps is much needed. The gymnasium is much used, and is of great benefit in maintaining the health of the troops.

II.—BLACK TROOPS.

The average strength of non-commissioned officers and men, exclusive of white sergeants, was 1,305; of these 451 were stationed in the Barbados and 854 in the Jamaica Command. The force in the Jamaica Command consisted of the Jamaica Company, Royal Artillery, from 1st April 1892, stationed at Port Royal; the West India Submarine Mining Company, also stationed at Port Royal; the West India Fortress Company, Royal Engineers, which arrived from Barbados on the 28th October; the 1st Battalion, West India Regiment, until the 27th January, when it left for Sierra Leone, having been relieved by the 2nd Battalion West India Regiment, which arrived here from Sierra Leone on the 24th January, and was stationed at Up Park Camp, at which place the Depôt, West India Regiment, is permanently located. The total average strength for the year was 756 at Up Park, and 98 at Port Royal.

In the Barbados Command were the St. Lucia Company, Royal Artillery, and detachments of the West India Fortress Company, Royal Engineers, and of the 1st Battalion, West India Regiment, until 3rd February, having been relieved by a similar detachment of the 2nd Battalion in January, from Sierra Leone.

West Indies.

The more important statistics of the sickness and mortality among black troops in each of the divisions as well as among those serving in the West Indies as a whole will be found in the subjoined table:—

1892.	Average Strength.	Admissions.	Deaths			Invalids	
			In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.
Barbados Command . .	451	586	5	—	5	—	15
Jamaica Command . .	854	1,104	17	—	17	—	21
West Indies . . .	1,305	1,690	22	—	22	—	36

continued.)

1892.	Average daily Sick.	Ratio per 1,000 of Strength.				
		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
Barbados Command . .	37·55	1299·3	11·09	—	33·26	83·26
Jamaica Command . .	66·67	1292·7	19·91	—	24·59	78·07
West Indies . . .	104·22	1295·0	16·86	—	27·59	79·86

In comparing the statistics for the Barbados Command with those for the previous year the admission ratio is decreased by 216·7, the death-rate is higher by 4·69, and the constantly sick rate less by 12·11. The average sick time to each soldier was 30·47 days, a decrease of 4·34. The average duration of each case of sickness was 23·45 days, being a fractional increase.

In the Jamaica Command there was an increase of 3·5 in the admission ratio, one of 5·56 in the death-rate, and one of 3·71 per 1,000 in the ratio of constant inefficiency through sickness. The average sick time to each soldier was 28·57 days, and the average duration of each case 22·10 days, both very slightly in excess of the corresponding periods in the previous year.

Taking all the black troops in the West Indies, the admission rate is lower by 71·5 than in previous year; the death rate is higher by 5·22, and the constantly sick rate is less by 1·66. The average sick time to each soldier 29·23 days, is fractionally shorter, and the average duration of each case of sickness 22·57 days, fractionally longer than in 1891. But compared with the similar ratios for the previous ten years, the admission, death, and constantly sick rates are higher by 124·1, 3·21, and 12·31 respectively, and the average sick time and duration of each case also higher by 4·57 and 1·51 respectively.

With regard to the sickness and mortality of corps in Barbados, the admission rate for the St. Lucia Company, Royal Artillery, was 1911·8 per 1,000, that for the West India Fortress Company, Royal Engineers, 1163·6, and death-rate 18·18 per 1,000, and for the 2nd Battalion, West India

West Indies.

Regiment, 1265·1, and death rate 40·34. In Jamaica the Jamaica Company, Royal Artillery, had an admission ratio of 1129·0 per 1,000 and no deaths. The West India Submarine and Fortress Companies, Royal Engineers, an admission rate of 714·3, and a death rate of 15·87, and the 2nd Battalion, West India Regiment, an admission rate of 1187·6, and a death rate of 16·63. In the Depôt, West India Regiment, the admission and death rates were 1551·3 and 28·84 per 1,000 respectively.

The sickness, according to age, taking the troops in the West Indies together, shows that in men under 20 years of age the admission rate was 1299·3 as against 2134·0 in previous year. In men from 20 to 25 the rate was 1781·5 as against 1544·5. In those from 25 to 30 it was 956·3 as against 1179·2, and in those of 30 years of age and upwards, it was 733·9 as against 705·5 in previous year.

Contrasting the mortality the following results are shown as compared with the previous year's returns. In those under 20 year's of age, the rate was 20·41 as against *nil*. In men from 20 to 25 years 15·74 against 12·07. In those between 25 and 30 years 17·11 as against 11·06, and in those over 30 years 16·13 as against 18·40.

With regard to length of service the admission rate in those in their first year of service was 1030·8 as against 1451·4 in previous year. In the second year the rate was 3351·3 as against 1712·3. In the third year 1652·8 as against 1115·7, and in over 3 years 1184·1 as against 1262·5.

The mortality rate in those under 1 year's service was 18·93, in the 2nd year 18·02, in 3rd year *nil*, and in over 3 years 14·44.

In Abstract VIII. will be found the chief statistics of sickness and mortality arranged according to the different groups and orders of diseases.

General Diseases.—*Diseases dependent on Morbid Poisons.*—The admissions under the head of *eruptive fevers* were 20 in number, equal to an admission rate of 15·3 per 1,000, a decrease below previous year of 10·9. *Enteric fever* caused 14 admissions and 8 deaths, an increase of 9·3 and 4·68 above the corresponding rates for previous year, and also of 9·0 and 5·41 above the previous six years. Three admissions and one death occurred at Barbados, the remainder at Jamaica. *Other continued fevers* caused 161 admissions, an admission ratio of 123·4 per 1,000, slightly less than previous year's rate, and there was one death from this cause. *Dysentery* caused 18 admissions and one death.

Malarial Fever.—There were 133 cases admitted for this cause, the ratio per 1,000 being 101·9 as against 160·0 in previous year. Of these cases 85 occurred in the Jamaica Command and 48 in the Barbados Command. There were only 2 deaths, one from ague at Barbados and one from remittent fever at St. Lucia. There were no admissions for *septic disease*.

Venereal Diseases.—The admissions for *primary syphilis* were 110, equal to an admission ratio of 84·3, being less by 56·1 than in previous year. Of these 14, equal to a ratio of 31·0 per 1,000, occurred in Barbados Command, and cases 96, or 112·4 per 1,000, in the Jamaica Command. Including the sickness from simple venereal ulcer, the admission ratio for primary venereal sores was 199·2, being less than previous year's rate by 21·9, but more than the six years' rate by 16·6. The constantly sick rate was 17·07, being less than the previous year by 3·87, and than the average rate by 1·21.

In the Jamaica Command the admission rate was 197·8, and the constantly sick rate 17·44, being less than the previous year's rates by 19·6 and 2·32 respectively.

In the Barbados Command the admission and constantly sick rates were 201·7 and 16·39 respectively as compared with 228·1 and 23·20 in previous year.

The admissions for *secondary syphilis* in the West Indies were 68, and 7·84 men were constantly sick, giving ratios of 52·1 and 6·01 respectively as compared with 38·5 and 4·17 in previous year, and an increase on the previous sexennial rates. In the Jamaica Command only the admission rate was 39·8, and constantly sick rate 4·55, as compared with 36·4 and 3·82 in previous year. In the Barbados Command the corresponding rates were 75·4 and 8·76, showing a marked increase of 32·8 in the admission ratio, and of 3·92 in that of constantly sick.

West Indies.

Gonorrhœa caused 196 admissions and 14·20 men were constantly sick, giving ratios of 150·2 and 10·88 respectively. This shows a decrease in admission rate of 69·4, and of 3·96 in constantly sick rate, as contrasted with previous year. There is a decrease also of 25·4 in the admission rate as against the previous six years' ratio.

In the Jamaica Command the admission ratio was 133·5, and constantly sick rate 9·10, a marked decrease of 102·7 and 4·17 respectively below last year's return.

In the Barbados Command the admission rate was 181·8, and constantly sick rate 14·26, a decrease below the similar rates for previous year.

Including all forms of venereal disease the total admission ratio in the West Indies was 401·5, and constantly sick rate 33·96, showing a decrease of 77·7 and 5·99 respectively below previous year's rate, but being much the same as the ratios for the previous six years.

There were 14 admissions for *debility*, and no deaths.

Rheumatism caused 84 admissions and no deaths, or an admission rate of 64·4, being greater by 14·9 than in previous year.

Tubercular Diseases caused 9 admissions and 3 deaths, being less than the admission rate for previous year by 4·0. The deaths were all due to lung disease.

LOCAL DISEASES.—*Diseases of the Nervous System* caused 9 admissions, or a ratio of 6·9 per 1,000, a decrease of 9·1 below previous year's rate.

Diseases of the Eye caused 33 admissions, being a rate of 25·3 per 1,000, a slight increase over previous year.

Diseases of the Ear and other organs of special senses caused 17 admissions, or a rate of 13·0 per 1,000.

Diseases of Circulatory System caused 11 admissions, but no death. The admission ratio of 8·4 was within a fraction of last year's rate, but less by 6·7 than the previous sexennial rate.

Diseases of Respiratory System caused 78 admissions and 5 deaths, being in the ratios per 1,000 for admission of 59·8, and 3·83 for death rate. 66 of these cases and all the deaths occurred in the Jamaica Command. The deaths were 3 pneumonia, 1 spasmodic asthma, and 1 bronchitis.

Diseases of Digestive System caused 95 admissions and no deaths, being in the ratio for admission of 72·8 per 1,000, a slight increase on that of last year. 69 of the cases occurred in Jamaica Command. The principal causes were sore throat and diarrhœa.

Diseases of Lymphatic and Glandular System caused 78 admissions, or a rate of 59·8 per 1,000, almost the same as for last year. There were no deaths. 56 of the cases occurred in Jamaica Command. *Diseases of urinary system* caused 6 admissions and 1 death from Bright's disease.

Diseases of the Generative System caused 194 admissions, 94 of the cases being in the Jamaica Command. The admission ratio was 148·7, an increase over previous year of 46·9, and over previous six years of 10·7. A very large proportion of the cases were due to simple venereal ulcer.

Diseases of organs of locomotion caused 6 admissions, or a rate of 4·6 per 1,000.

Diseases of Connective Tissue caused 28 admissions, a rate of 21·5, or nearly one-half the previous year's rate.

Diseases of the Skin caused 177 admissions, a rate of 135·6 per 1,000, being less by 76·7 than in previous year.

Injuries caused 97 admissions, a rate of 74·3, and one death. The death was due to asphyxia from drowning, probably suicidal.

Invaliding.—The number of men finally discharged the service as medically unfit was 36, being in the ratio of 27·59 per 1,000, a very marked decrease below last year's rate, which was 58·18. In the Barbados Command 15 men, or a ratio of 33·26 per 1,000 were discharged. This is 20·04 less than in previous year. In the Jamaica Command 21 were invalided, equal to a ratio of 24·59 per 1,000, a decrease of 36·12 as compared with 1891, the greater number being between the ages of 20 and 30.

West Indies.

The principal causes of invaliding were debility, tubercle, heart disease, and secondary syphilis.

Women and Children.—The average strength of women was 59, and there were 27 admissions for sickness, and no deaths. The average strength of the children was 45, and there were 15 admissions and 1 death.

Sanitary Conditions.—The Senior Medical Officer, Barbados, reports the general health as good. The barracks are comfortable and ample, and the food supply very satisfactory; there is a marked difference in the *physique* of the well-fed black troops and the rest of the civil coloured population.

The Senior Medical Officer, Jamaica Command, reports the general health to be good. No special remarks.

VII.—ON THE HEALTH OF THE TROOPS SERVING IN WESTERN AFRICA.

Sickness and Mortality.

I.—White Troops.

West Africa.

The white troops consisted of the officers serving in the Command, the European non-commissioned officers of the 1st and 2nd Battalions, West India Regiment, the non-commissioned officers and men of the Royal Artillery and the Royal Engineers, the latter only remaining during the dry season from November to June. The average strength of the non-commissioned officers and men of the white troops was 36 The admissions into hospital were 128, There were 5 deaths, and 19 cases of invaliding. The admission ratio was 3555·6 per 1,000, as against 2594·6 in previous year. The death rate was 138·89 against *nil*, and the invaliding rate 527·78 against 54·05 in previous year. Four deaths were due to remittent fever, and one to heart disease. The average strength of officers was 32. There were 76 admissions, 3 deaths, and 14 cases of invaliding. The admission rate was 2375·0 against 2884·6 in 1891. The invaliding rate was 437·50 against 384·61. The death rate was 93·75 per 1,000, as against *nil* in previous year. Two of the deaths were from gunshot wounds in action, and one was due to heart disease. Of the invalids 12 cases were due to remittent fever, one to debility, and one to valve disease of heart.

II.—Black Troops.

The average strength of non-commissioned officers and men was 948; of these 831 were stationed at Sierra Leone, and 117 at Bathurst, Gambia. These troops consisted of the 1st and 2nd Battalions, West India Regiment, and detachments of the West Indian Fortress Company and West African Artillery.

The more important of the statistics of sickness and mortality are given in the following table:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent to West Indies.	Finally Discharged.		Admissions.	Deaths.	Invalids sent to West Indies.	Invalids finally Discharged.	Constantly Sick.
948	2,257	40	—	40	32	7	98·95	2380·8	42·19	33·75	7·38	104·38

Compared with corresponding results in the previous year the admission ratio has increased by 907·5, and the constantly sick rate by 26·45; the death rate also is greater by 24·08.

The average sick time to each soldier was 38·20 days, and the average of each case of sickness 16·05 days, an increase of 9·76, and a decrease of 3·25 respectively compared with previous year.

The admissions, mortality, invaliding, &c. in the different groups and orders of diseases are given in Abstract IX.

West Africa.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—There were 66 admissions, of which 37 were due to influenza, 4 mumps, 5 simple continued fever, 1 enteric fever, and 19 dysentery. Influenza was epidemic during early part of year. The cases of dysentery appeared after the men's return from active service, and were due to bad water.

Malarial Fevers.—There were 1,165 admissions, of which 20 proved fatal. This gives a ratio of admission of 1228·9 as compared with 583·5 in previous year, or more than double, and the death rate in previous year was *nil.* This heavy increase is due to exposure on active service. The majority of admissions were for remittent fever of a very severe type.

Venereal Diseases.—Under the head of *primary syphilis* 61 admissions are returned, being in the ratio of 64·3 per 1,000, an increase of 12·7 on the previous year's rate, and of 8·1 per 1,000 on that of the average of the preceding 6 years. Adding the sickness for simple venereal ulcer, which caused 12 admissions, the ratio for simple venereal sores was 77·0 per 1,000, a decrease of 29·6 per 1,000 compared with that of the previous year, and of 33·6 with that of the average of the preceding six-yearly period. *Secondary syphilis* caused 38 admissions, or 40·1 per 1,000, which is lower than that of the preceding year by 11·5, and of the average of the preceding six years by 3·1. The admissions for *gonorrhœa* numbered 145, and were in the ratio of 153·0 per 1,000; this rate is 5·0 per 1,000 over the preceding year's rate, and 2·5 over the sexennial average. Including all forms of *venereal disease* the admission ratio amounted to 270·1, which is lower by 36·1 per 1,000 than the previous year and by 34·2 than the average. The total amount of inefficiency on account of these diseases was 17·30 per 1,000; this is lower than the similar rate in 1891 and previous six-yearly period by 6·96 and 5·99 per 1,000 respectively.

Parasitic Diseases caused 2 admissions, both for tænia solium, as compared with 7 in the previous year.

Debility.—24 admissions are recorded, equal to a rate of 25·3 per 1,000, as compared with 17·2 the rate for 1891, and 26·9 the average rate.

Rheumatism caused 110 admissions, equal to 116·0, an increase of 11·0 on the preceding year, and of 28·6 per 1,000 on the average.

Tubercular Diseases caused 11 admissions and 5 deaths as compared with 3 and 1 in the preceding year. All the cases were due to tubercular disease of the lungs.

The remaining admissions in this group were due to scrofula 4, elephantiasis 1.

LOCAL DISEASES.—*Nervous System.*—Admissions under this head numbered 13. The ratio per 1,000 is identical with that of the previous year, but shows an increase, 1·9 per 1,000, over the average. The death was due to epilepsy.

Diseases of the Eye.—21 admissions from this cause are recorded, equal to a ratio of 22·2, an increase of 1·5 per 1,000 over the previous year's rate, but a decrease of 5·6 over the average. 15 of the admissions were for conjunctivitis.

Diseases of other Organs of Special Sense caused 14 admissions, 13 of which were for diseases of the ear.

Diseases of the Circulatory System.—Under this head 26 admissions are returned. The admission rate is 8 times that of the previous year, and 11·1 per 1,000 over the average. 18 of the admissions were due to palpitation, and 7 to valve disease of heart.

Diseases of the Respiratory System.—76 admissions and 4 deaths are recorded under this head, being in the ratios of 80·2 and 4·22 per 1,000 respectively. The admission rate is more than double that of 1891, and 23·7 over the average rate. The principal causes of admissions were bronchitis 32, bronchial catarrh 26, and pneumonia 13, to which latter disease all the deaths were due.

Diseases of the Digestive System caused 103 admissions, equal to a rate of 108·7 per 1,000. This rate is 4 times that of the preceding year, and 43·7 higher than the average. Diarrhœa (57 cases) was the principal cause of admission. One death from peritonitis is recorded under this heading.

Diseases of the Lymphatic and Glandular Systems.—The admission rate under this head equalled 40·1 per 1,000. This rate is lower by 8·1 than that of the preceding year, and by 22·5 than that of the average. Inflammation of glands was the cause of 33 of the 38 admissions.

Diseases of the Urinary System.—Under this head 5 admissions and 2 deaths are recorded, as compared with *nil* in the previous year. The deaths were due to Bright's disease and cystic disease of kidney.

Diseases of the Generative System gave a ratio of 52·7, a decline of 23·0 on the previous year's rate and 29·2 in that of the average rate. Stricture of urethra caused 20 of the admissions, and orchitis 15.

Diseases of the Organs of Locomotion caused 7 admissions, of which 4 were due to synovitis. The admission rate is lower than that of the preceding year and of the average by nearly one-half.

Diseases of the Connective Tissue.—The admission rate, 32·7 per 1,000, is lower than that of the previous year by 34·4, and 9·3 per 1,000 below the average. The admissions were nearly equally divided between inflammation and abscess.

Diseases of the Skin with a ratio of 128·7 exceeds that of the preceding year, by 34·0 per 1,000, but is below the average six-yearly rate by 25·5. The principal causes of admission were ringworm (40), ulcer (32), boil (23), and eczema (15).

Injuries were 122 in number, equal to a ratio of 128·6, this exceeds the rate of the preceding year by 61·5, and that of the sexennial average by 53·0 per 1,000. 13 of these admissions were due to wounds in action. 4 deaths are recorded under this head; 2 from gunshot wounds, one in action, the other homicidal; 1 from multiple injury, and 1 from heat apoplexy.

Invaliding.—The number of men invalided to the West Indies for change or discharge was 32, equal to a rate of 33·75 per 1,000. This rate is less than half that of the previous year but exceeds that of the preceding ten years by 6·79 per 1,000. The principal causes were constitutional syphilis 7 cases, rheumatism and diseases of circulatory system 4 cases each, and 3 the result of wounds received in action.

Seven men were finally discharged the service, or 21·88 per 1,000 less than in the preceding year, but 1·02 higher than the 10-yearly average. The cases were distributed amongst 7 different classes.

Women and Children.—The average strength of the women was 41, and there were 79 attacks of illness, equal to a ratio of 1926·8 per 1,000, which exceeds that of the preceding year by 444·1. The principal causes of attack were remittent fever 47 cases, debility 12, and influenza 6. There was one death from remittent fever. The average strength of the children was 39, and the cases of sickness 57 in number. The ratio of prevalence was therefore 1461·5 per 1,000, an increase of 544·9 over that of the previous year. Remittent fever caused 32 of the attacks. One death occurred from convulsions and one from bronchitis.

Sanitary Conditions.—The Senior Medical Officer, Surgeon-Major S. J. Flood, reports that in his opinion the great increase of sickness amongst the black troops in the year under report has been due to—

1st. This being the year of arrival of a fresh battalion of the West India Regiment.

2nd. That during the year the regiment took part in four different expeditions, viz., two to the Gambia and one each to Tambi and Lagos.

3rd. The erratic rainfall which was distributed more or less throughout 10 months of the year.

The general sanitary condition of Sierra Leone and Gambia during the year was satisfactory.

The Senior Medical Officer expresses an opinion that the ration of the black troops should consist of more vegetables and less meat, and with regard to clothing recommends the substitution of ankle boots and thick stockings for the present shoes and thin stockings.

The drainage (surface) is reported to be in good order, the means of ablution satisfactory, as also the cooking arrangements and water supply.

VIII.—ON THE HEALTH OF THE TROOPS SERVING IN SOUTH AFRICA AND AT ST. HELENA.

Sickness and Mortality.

South Africa and St. Helena.

The average strength of the warrant officers, non-commissioned officers, and men serving in the Command during the year was 3,209, and of these 186 were stationed at St. Helena.

The troops in the Command during the year comprised the 3rd Dragoon Guards, who arrived from India in October, the 11th Hussars, who had been here since August 1890, and who left for India on being relieved, the 4th Mountain Battery, Royal Artillery, the 8th Company, Southern Division, Royal Artillery, the 29th Company Royal Engineers, the 1st Battalion East Yorkshire Regiment, the 2nd Battalion, York and Lancaster Regiment, and 4 Companies of the 1st Battalion, North Staffordshire Regiment, detachments of District Establishment, Royal Artillery, Army Service Corps, Medical Staff Corps, and Garrison Staff.

At St. Helena the Garrison included a detachment of one Company York and Lancaster Regiment, which was relieved in July by a Company of the East Yorkshire Regiment and a detachment of Artillery.

In the following table the more important statistics of sickness and mortality in the whole Command are given, and those for South Africa and St. Helena are shown separately:—

1892.	Average Strength.	Admissions.	Deaths			Invalids	
			In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.
South Africa - - -	3,023	2,969	14	1	15	98	51
St. Helena - - -	186	142	2	1	3	5	—
Total - - -	3,209	3,111	16	2	18	103	51

(*continued.*)

1892.	Average constantly Sick.	Ratio per 1,000 of Strength.				
		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
South Africa - - -	172·86	982·1	4·96	32·41	16·87	57·18
St. Helena - - -	6·73	763·4	16·13	26·88	—	36·18
Total - - -	179·59	969·5	5·61	32·08	15·89	55·96

South Africa and St. Helena.

Compared with corresponding ratios in the previous year, an increase is observed in the admission ratio of 135·6, and a decrease in mortality rate of 3·49, also a decrease in constantly sick rate of 1·34. Compared with the similar average ratios for the preceding ten years there is an increase of 180·2 in the admission rate, but a decrease in mortality rate of 2·97, and an increase of 3·09 in the constantly sick rate. The increase in the admission rate was caused by the prevalence of influenza, ague, and venereal disease. The average sick time to each soldier was 20·48 days as against 20·92 in previous year, and 19·30 days the decennial average period. The average duration of each case of sickness was 21·13 days, as compared with 25·08 in the previous year, and 24·45 days the decennial average period.

Of the ratios for South Africa alone an increase of admission rate of 127·2 and a decrease in the death-rate of 3·90 is observed. At St. Helena the corresponding rates were both higher than those for 1891.

The statistics of sickness and mortality of the different corps will be found in Abstract XL. Excluding corps whose average annual strength was under 100, the highest admission rate was amongst the 3rd Dragoon Guards at Pietermaritzberg, being 2,803·0 per 1,000; the highest mortality rate occurred in the Royal Engineers at various stations, being 20·0 per 1,000; the highest ratio per 1,000 of constantly sick, 100·83, was also in the 3rd Dragoon Guards. The next highest admission rate was in the 4th Mountain Battery, Royal Artillery, being 1321·4 per 1,000; the lowest admission rate was 610·0 per 1,000 in the Engineers, followed by 653·0 per 1,000 in the 1st East Yorkshire Regiment (with headquarters and six companies at Wynberg and two companies permanently at out-stations); and the next lowest amongst the 2nd York and Lancaster Regiment at Pietermaritzberg, with a company at Eshowe and one company at St. Helena for half the year. There were no deaths in the 3rd Dragoon Guards at Pietermaritzberg, or in the 8th Company, Southern Division, Royal Artillery, at Cape Town. The second highest ratio of constant inefficiency through sickness was in the 4th Mountain Battery, Royal Artillery, being 88·33 per 1,000, the lowest ratio being 33·40 in the Royal Engineers. Taking the sickness and mortality among the troops according to age, it is shown that in men under 20 years of age the admission ratio was 1,058·8 per 1,000, in those between 20 and 25 years it was 1,148·5, in those from 25 to 30 it was 838·2, in those from 30 to 35 it was 597·5, and in those from 35 and upwards 457·1. As contrasted with previous year, there was an increase in the first and last periods, but a slight decrease in that from 25 to 30 years. There was no mortality amongst men under 20 years of age, but the ratio in those from 20 to 25 was 3·27, in those from 25 to 30 4·42, in those from 30 to 35, 16·61 and in men from 35 years of age and upwards 19·05. In the previous year the highest mortality was amongst men under 20 years of age. With regard to service in the Command, the admission ratio in men in their first year was 1,303·4, in those in their 2nd year 892·7, in the 3rd year 1,022·1, in 4th year 657·3, and in 5th year and upwards 574·3. In the previous year the highest admission rate was in men in their 3rd year of service. The rate of mortality amongst men in their 1st year was 2·81, in the second year 6·07, in the 3rd year 7·35, in 4th year 7·82, and 5 years upwards *nil*. In preceding year the highest mortality was in men under 1 year's service in the Command.

In Abstract X. will be found the principal statistics of sickness and mortality arranged according to the different groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Eruptive fevers* are represented by 2 cases of measles and 3 of dengue.

Enteric Fever caused 33 admissions and 5 deaths, being in the ratios of 10·3 and 1·56 respectively per 1,000. The admission rate is lower than that of the previous year by 14·2, but higher than the previous sexennial average rate by 2·4. The mortality rate is also lower than the preceding year by 3·78, and than the average for the previous six years by ·23. The per-centage of mortality to attack was 15·15, as compared with 21·79 in previous year and 22·7 for previous six years. Of the 33 admissions during the year, 25 occurred at Pietermaritzberg, 3 at Simonstown, 2 each at St. Helena, and Wynberg, and 1 at Eshowe. It is very difficult to assign any special exciting cause for the occurrence of this fever in South Africa. The water and milk used by the

South Africa and St. Helena.

troops has been shown to be good, but there have been faults in drainage and in the condition of the vicinity of the barracks, and these causes most probably contributed to the outbreak of disease.

Seventy-five per cent. of the whole cases of enteric fever occurred at Pietermaritzberg, where the disease was epidemic last year, and many of the huts are of faulty construction, of iron unlined with wood or other material, and therefore subject to considerable changes in temperature. These huts are quite unsuited to the climate of Natal. Some of the verandah floors are of loose earth, and difficult to keep clean, also favourable to contamination and subsequent unhealthy emanations. The position of the Royal Artillery stables, as previously reported, is very objectionable, being constructed in a hollow, they are a source of danger to buildings in the vicinity. At St. Helena the Medical Officer reports that the two cases there were due to the proximity of the buildings occupied by them to the "run" or common sewer of Jamestown.

Simple Continued Fever caused 167 admissions, or a ratio of 52·0, being lower than the previous year's rate by 16·7, but higher than the sexennial average ratio by 17·0. The cases were generally mild.

Dysentery caused 13 admissions and one death. The admission ratio was 4·0, being higher than previous year by 1·8, but lower than the sexennial average period by 2·7. In Natal there were 5 cases, in Zululand 1, and in Cape Colony 7.

Influenza caused 140 admissions, or a ratio of 43·6, which is higher than the rate in the previous year by 42·7. Eighty admissions occurred in the early part of the year in Cape Colony. Later on in Natal and Zululand it caused 60 admissions.

The remaining admissions in this sub-group of diseases were 4 of mumps and 1 of whooping-cough.

Malarial Fevers.—253 cases are recorded, being a ratio of 78·8, a very large increase over previous year's rate, which was only 12·6, and also higher by 69·2 than the previous sexennial average rate. The cases were all ague, and occurred principally in men of the 3rd Dragoon Guards, who recently arrived from India. This regiment gave 237 admissions out of the total number.

Septic Diseases were represented by 3 cases of erysipelas.

Venereal Diseases.—The admissions for *primary syphilis* were 186, equal to a ratio of 58·0, which is lower than in previous year by 5·1. Of the cases, 142 were in Cape Colony and 44 at Pietermaritzberg. Including the sickness from simple venereal ulcer (71 admissions and 4·52 constantly sick) the admission ratio for primary venereal sores was 80·1, which is higher than the preceding year by 4·8, but lower than the sexennial average rate by 47·1. The admissions for *secondary syphilis* were 220 in number. 117 of these occurred at Pietermaritzberg, 18 at Eshowe, 7 at St. Helena, and the remaining 78 in Cape Colony; the admission rate is higher than that for the previous year by 24·2, and than the sexennial average rate by 10·5.

Gonorrhœa caused 317 admissions, chiefly in Cape Colony, where 215 were admitted. 75 occurred at Pietermaritzberg, 26 at St. Helena, and 1 at Eshowe. The ratio for admission was 98·8 per 1,000, an increase over previous year of 26·9, and over sexennial average of 6·4. Including all forms of venereal disease, the total admission rate reached 247·4, being higher than the previous year by 55·9, but lower than the sexennial average by 30·2. The total amount of constant inefficiency from these diseases was 22·7 per 1,000, which is higher than the previous year by 7·74 and than the sexennial average by 2·05. Venereal disease increased to a considerable extent in Cape Colony during the months of August, September, and October. The cause of this could not be satisfactorily ascertained, but it was probably due to the defective provisions of the Contagious Diseases Act, and to inability to carry out the provisions already existing.

Parasitic Diseases caused 7 admissions, as against 11 in the previous year.

Alcoholism gave only 2 admissions.

Debility, &c.—There were 45 admissions in this group, being a ratio of 14·0 per 1,000, which is higher by ·8 than in previous year. *Rheumatism* caused 95 admissions (and 1 death), of which 54 were in Natal. The admission rate was lower by 4·6 than in previous year.

Tubercular Diseases caused only 4 admissions, all for lung affection, and under the head of "other diseases" of this group are 13 admissions, amongst

South Africa and St. Helena.

them being 3 for anæmia, 2 for fibroma, and one each for scrofula, purpura, and diabetes.

LOCAL DISEASES.—*Nervous Diseases* caused 29 admissions and 1 death, the admission rate being 9·0 below previous year. 11 of these cases were neuralgia, 7 epilepsy, 5 vertigo, 3 paralysis, and 1 each for apoplexy, local paralysis, and a fatal case of meningitis.

Mental Diseases caused 5 admissions, 3 being dementia, one of which was fatal, 1 hypochondriasis, and 1 melancholia.

Diseases of the Eye caused 50 admissions, or a ratio of 15·6 per 1,000, an increase above previous year. 26 of the cases were for conjunctivitis.

Diseases of other Organs of Special Senses caused 48 admissions, all the cases being of a simple character. With the exception of five cases of nasal affection, all the admissions were for aural disease.

Diseases of the Circulatory System.—There were only 21 admissions, or a ratio of 6·5, about one half the rate for the previous year. Amongst the cases were 4 for valvular disease and 12 for palpitation.

Diseases of the Respiratory System.—There were 117 admissions and 2 deaths, being a ratio of 36·5, an increase of 13·0 over previous year and of 13·4 over previous sexennial average period. Bronchial affections caused 99 of the admissions. The fatal cases were 1 pneumonia and 1 pneumonic phthisis.

Diseases of the Digestive System caused 425 admissions and 1 death, the ratio per 1,000 being 132·5, an increase of 28·3 above previous year's rate, and one of 49·2 above previous sexennial average period. The principal causes of admission were affections of the mouth and throat, and of the remainder there were 67 for diarrhœa and 48 for dyspepsia. The death was due to inflammation of the stomach.

Diseases of the Lymphatic System caused 47 admissions, a rate of 14·7 per 1,000, being a decrease of 6·7 below previous year's rate.

Diseases of the Urinary System caused 8 admissions, being slightly greater than in previous year.

Diseases of the Generative System caused 130 admissions, being a rate of 40·5 per 1,000 an increase of 10·7 over previous year, but a decrease of 9·6 below previous sexennial average rate. The principal causes of admission were ulcer of penis and orchitis.

Diseases of the Organs of Locomotion caused 24 admissions or 7·5 per 1,000.

Diseases of the Connective Tissue gave a rate of 36·1 per 1,000, higher than in previous year by 6·6.

Diseases of the Skin caused 194 admissions, being a ratio of 60·5, lower than previous year by 15·8. Boils, ulcers, itch, and eczema were the chief causes of admission.

Poisons gave 3 admissions, 1 alcohol, 1 snake bite, and 1 poisonous fungi. There was one death out of hospital from cyanide of potassium, a case of suicide.

General Injuries caused 3 admissions, and one death out of hospital for multiple injuries from a railway accident.

Local Injuries caused 377 admissions and 2 deaths (out of hospital), the ratio being 117·5 or 12·5 less than in the previous year. The deaths were due to suicide, one by gunshot and one incised wound of neck, motives unknown. The chief causes of admission were wounds 127, contusions 92, and sprains 77.

Invaliding.—The number of men invalided home during the year was 103, being a ratio of 32·08 per 1,000. This is higher than the previous year by 7·59, and than the decennial average period by 1·46. In the cavalry the rate was 64·76, the artillery 33·56, the engineers 10·00, and the infantry 51·88. All the rates are higher than last year, except the Royal Engineers.

According to age 2 men, or a rate of 9·80 per 1,000, were under 20 years of age, 55, or a rate of 35·99, were between 20 and 25 years, 38, or 33·60, were between 25 and 30 years, and 8, or 23·12, were over that age.

As to service in the Command, 32 men, or a rate of 29·96, had less than one year's service, 37, or 37·45, were in their 2nd year, 10, or 36·76, were in their 3rd year, 19, or 29·73, in their 4th year, and 5, or 20·66, were over that period. The principal causes of invaliding were secondary syphilis, debility, and tubercle of lung. The number finally discharged was 51, or a rate of 15·89, a

South Africa and St. Helena.

slight decrease below previous year and also below the decennial average period.

Officers.—The average strength was 135 and there were 94 admissions, being a rate of 696·3 per 1,000. No deaths occurred, and 5 officers were invalided, the admission rate was higher by 223·3 than in previous year. The principal causes of admission were simple continued fever, influenza and diarrhœa. The invalids were debility 2 cases, and simple continued fever, sclerosis of spinal cord, and sunstroke, one case each.

Women. — The average strength was 211 with 133 admissions and 3 deaths. The ratio of the prevalence of sickness was 630·3, or nearly double the previous year's rate. The principal causes of sickness were influenza 18 cases, debility 31, and diseases of digestion 24. The deaths were one from tubercle of lung, pneumonia, and an affection connected with parturition.

Children.—The average strength was 414, and cases of illness 277, with 18 deaths. The ratio of sickness was 669·1 as against 310·6 in previous year. The mortality rate being 43·48 as against 30·30 in previous year. The principal causes of sickness were measles 73, mumps 30, and diarrhœa 26 cases. The deaths were 3 from bronchitis, 2 each from measles, tubercle, meningitis, tetanus, and diarrhœa, and one from constitutional syphilis, immaturity at birth, hydrocephalus, convulsions, and pneumonia respectively.

Sanitary Conditions.—The Principal Medical Officer Surgeon-Colonel J. Colahan, M.D., reports that the sanitary condition of the various barracks and camps was fairly satisfactory, and every effort used to remedy defects.

At Cape Town, in the Castle itself, a new system of drainage is in course of construction, but the open sluits outside the Castle are still very objectionable. A new prison is in course of erection at Wynberg. At Simonstown the "Brook" in the vicinity of the barracks is at times very offensive and liable to be dangerous to the health of the troops. At Pietermaritzberg considerable improvements have been effected, but the buildings are still, many of them, of defective construction, being unsuitable to the climate of Natal. The means of ablution and the lavatories generally are insufficient. At Eshowe and Wynberg the general sanitary conditions are good.

The water supply has been abundant and of good quality, except at Eshowe, where during wet weather it is apt to become polluted. Two Abyssinian wells are in process of being sunk, which should secure an ample supply of good water. The rations have been generally good. The clothing is good, but a supply of lighter texture has been recommended and issued.

IX.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF MAURITIUS.

Sickness and Mortality.

Mauritius.

The average strength of warrant officers, non-commissioned officers and men was 560, and the force was composed as follows:—The 23rd Company, Southern Division, Royal Artillery, detachment Royal Engineers, headquarters and 4 companies of 1st Battalion, North Staffordshire Regiment, detachments of Army Service Corps, Medical Staff Corps, and Garrison Staff.

In the subjoined table will be found the most important of the statistics of sickness and mortality among the troops:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
560	597	8	2	10	28	8	24·94	1066·0	17·86	50·00	14·28	44·53

Compared with the corresponding ratios for the previous year there is a decrease of 113·4 per 1,000 in the ratio for admissions, one of 8·0 in the death rate, and one of 16·54 in the constantly sick rate. Whilst against the previous decennial period there is a decrease of 625·9, 1·0, and 35·84 respectively. The average sick time to each soldier was 16·30 days, and the average duration of each case of sickness 15·29 days, being a decrease of 5·99 and 3·61 days respectively as compared with previous year, and a decrease also of 13·03 and 2·05 days from corresponding periods for previous ten years.

In Abstract XL. are shown the statistics of sickness and mortality in individual corps. In the Artillery the admission and constantly sick rates were 1392·8 and 60·00 per 1,000 respectively, being much the same as in the previous year. In the infantry these ratios were 990·0 and 41·97 respectively, a decrease of 181·0 and 19·97 as compared with preceding year.

Taking the sickness and mortality amongst the troops according to age, it is found that in men under 20 years of age the ratio of admission was 1000·0, being lower than in previous year. Among men between 20 and 25 years it was 1480·6, and from 25 to 30 years 636·4, being very much the same as in 1891. For those over 30 years of age the rate is much lower than in 1891, being 870·4 as against 2034·5 in previous year.

The death rate in those under 20 years of age was *nil*, in those from 20 to 25, 7·75 per 1,000, from 25 to 30 years, 22·73, and in those over 30 years of age, 18·52.

As to length of service in the Command, the admission rate in those under one year's service was 1116·7, in their second year 1164·8, in their third year 621·90, and over three years' service, 500·0; these rates are much the same as for the previous year, except as regards men over three years, when the admission rate was *nil*. The death rates for the above periods were 25·38, 10·75, *nil* and *nil*, as against 29·54, 7·87, *nil* and *nil*.

In Abstract XI. will be found the chief statistics of sickness and mortality arranged according to the different groups and orders of diseases.

Mauritius.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—There was one admission for *eruptive fever,* a case of cow-pox. *Enteric fever* caused 8 admissions and 3 deaths. The ratios for admission and deaths were 14·3 and 5·36, as against 50·0 and 15·52 in previous year. The disease is endemic amongst the civil community, and the surroundings of the barracks are generally in an insanitary state.

Dysentery was the cause of seven admissions. The remaining admission in this sub-group was one of influenza.

Malarial Fevers caused 245 admissions, giving a ratio of 437·5, an increase of 78·9 over 1891, but a decrease of 101·1 below the average rate for the previous six years. One death occurred in an invalid after leaving the Command. Except 21 cases of ague, all the admissions were for remittent fever, the chief cause of this being residence in Port Louis.

Venereal Diseases.—There were 27 admissions for *primary syphilis,* being a ratio per 1,000 of 48·2, exactly double the rate of the previous year. Most of the cases were contracted at Port Louis, and were of a severe type.

Secondary Syphilis with 17 admissions showed an increase over previous year's rate of 4·5.

Gonorrhœa caused 26 admissions, being a ratio of 46·4, a decrease below 1891 of 20·8. Including all forms of venereal disease, the admission rate was 157·1, and the constantly sick rate 8·32, an increase of 12·3 in the former, and a decrease of 2·20 in the latter as compared with previous year, and a decrease of 92·9 and 9·82 respectively below the corresponding ratios for the previous sexennial period.

The Senior Medical Officer is of opinion that the marked decrease in the admission rate as compared with the average of the previous six years is due to the larger proportion of the garrison being quartered at Curepipe.

Parasitic Diseases.—Only 1 admission occurred for tænia solium. Under the head of *debility* 1 admission is shown.

Rheumatism caused only 3 admissions. This is remarkable considering the very damp climate of Curepipe.

Tubercular Disease of the lung caused 1 admission and 2 deaths. One being the case of an invalid who died after leaving the Command. *Other diseases* of this group caused 5 admissions, all being cases of non-malignant new growth.

LOCAL DISEASES.—*Diseases of the Nervous System* gave 7 admissions, including 1 case of mental disease. The ratio, 12·5 per 1,000, is lower than that of 1891 by 3·0. There was one death from apoplexy.

Diseases of the Eye.—There were 12 admissions, giving a ratio of 21·4, being 14·5 increase over previous year. *Diseases of the ear* caused 5 admissions, a decrease in the ratio below 1891 of 3·2.

Diseases of the Circulatory System caused 7 admissions, or a rate of 12·5, being 6·5 below previous year.

Diseases of the Respiratory System caused 13 admissions, or a ratio of 23·2, being 4·4 less than in previous year. None of the cases were of a serious nature.

Diseases of the Digestive System.—There were 76 admissions, being a ratio of 135·7, a decrease of 26·4 below previous year, but an increase of 21·6 as compared with previous sexennial period. The greatest number of admissions were for diarrhœa, but the most serious were abscesses of the liver 5 cases, of which 3 died.

Diseases of the Lymphatic and Glandular System gave 18 admissions, or a rate of 32·1 per 1,000, being considerably less than in previous year.

Diseases of the Urinary System gave only 1 admission, and for those of the *generative system* there were 26 admissions, or a rate of 46·4 per 1,000, practically the same as in last year.

Diseases of the Organs of Locomotion gave 5 admissions, and of the *connective tissue* 11 admissions. *Diseases of the skin* gave 28 admissions, a rate of 50·0, being 25·9 less than last year. The majority of the admissions were for boils.

Injuries.—There were 43 cases of local injuries, equal to a rate of 76·8, being less by 49·0 than in previous year. The cases were all of a trivial nature.

Invaliding.—The number of men invalided home during the year was 28, equal to a ratio of 50·0 per 1,000, which is higher by 36·21 than in previous

Mauritius.

year, and also 8·66 higher than the average of the previous 10 years. In the Royal Artillery the invaliding ratio was 107·14 per 1,000, in the Royal Engineers 80·00, in the Infantry 32·42, and in Departmental Corps 45·45. With regard to age, 2 men, or 71·43 per 1,000, were under 20 years of age, 15 men, or 58·14, between 20 and 25 years, 4 men, or 18·18, between 25 and 30, and 7 men, or 129·6 per 1,000, were 30 years of age and upwards. As to service in the Command, none were invalided under one year; 26, or 93·19, were in their 2nd year, one man in his 3rd year, and one man in his 4th year. The principal causes of invaliding were malarial fevers 12 cases, secondary syphilis 4 cases, eye disease 4 cases, and liver disease 3 cases. The number of men finally discharged by invaliding was 8, equal to 14·28 per 1,000, a fractional increase on the previous year's rate, but a decline of ·73 from the decennial average rate. The causes of final discharge by invaliding were malarial cachexia, secondary syphilis, debility, mental disease, disease of the eye, deafness, incontinence of urine, and fracture one case respectively.

Officers.—The average strength of officers was 37, and there were 26 cases of illness, the ratio per 1,000 for sickness being 702·7, or 251·1 higher than in previous year. There were no deaths, and 2 officers were invalided. The principal cause of inefficiency was malarial fever.

Women.—The average strength was 33; eight cases of illness were recorded, and no deaths. The chief causes of illness were malarial fever and debility.

Children.—The average strength was 57, and there were 11 cases of illness recorded and 2 deaths. The ratio for sickness per 1,000 was 193·0, a decrease of 103·9 under previous year. The fatal cases were one each from meningitis and convulsions.

Sanitary Conditions.—The Senior Medical Officer, Brigade Surgeon Lieutenant-Colonel W. H. B. Clapp, M.D., reports that the chief general causes militating against the health of the troops are (1) the malarial nature of the climate; (2) the general ignorance and neglect of the simplest rules of sanitation amongst the civil community of all grades; (3) the impure water supply at Port Louis; (4) the total absence of sewerage, and the defective system of hand-removal of excreta. At Port Louis the sanitary condition is as bad as it possibly can be.

The following are some of the recommendations put forward:—To construct a proper system of sewerage. Provision of pure water supply. The adoption meanwhile of "Mould's" earth-closets. The erection of a gymnasium and theatre at Curepipe, and the provision of a Government soda water machine, under proper supervision.

The following improvements have been carried out:—The drains at Curepipe have been extended, and surface gutters in concrete constructed. The jungle has been cleared away near the huts. A new hospital extension has been completed. Extensive works are in progress for providing a new water supply for Curepipe.

X.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF CEYLON.

Sickness and Mortality.

I.—White Troops.

Ceylon.

The average strength of warrant officers, non-commissioned officers, and men was 1,261, an increase of 10 over the previous year. The force comprised the headquarters and half of 41st Company, Royal Engineers, half of the 4th Company, Southern Division, Royal Artillery, from 1st January to 10th February, when it embarked for England. The 16th Company, Southern Division, Royal Artillery, the 2nd Battalion, Royal Warwickshire Regiment, from the 4th January, when it arrived from India, the 1st Battalion, Gordon Highlanders, from 1st to 4th January, when it went to India, detachments of Medical Staff Corps, Ordnance Store Corps, and Garrison Staff.

The distribution of the force was as follows:—The headquarters and four companies of the infantry battalion, and a half company Royal Artillery, at Colombo, two companies of infantry at Kandy, one company of infantry, half company of artillery, and half company Royal Engineers at Trincomali. One company infantry at Mt. Lavinia.

In the subjoined table will be found the more important of the health statistics of the troops in the Command:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids Sent Home.	Invalids finally Discharged.	Constantly Sick.
1,261	1,320	12	—	12	11	7	64·65	1046·8	9·51	8·72	5·55	51·27

Comparing the results with those of the preceding year, an increase of 130·0 has occurred in the ratio of admissions and a decrease of 2·48 in that of deaths, also a decrease of 2·51 in that of constantly sick. Compared with previous decennial period the admission rate is lower by 60·5, the death rate by 2·87, and constantly sick by 9·96. The average sick time to each soldier was 18·76 days, being less than previous year by ·87 of a day, and than the previous decennial period by 3·59 days. The average duration of each case of sickness was 17·93 days, being shorter than previous year by 3·48 days, and the decennial average by 2·25 days.

In Abstract XL. will be found the statistics of particular corps. The admission rate for the artillery was 978·0, for the engineers 640·0, for the infantry 1130·1, and Garrison Staff and Departments 216·2. The death rate in the artillery was 17·62, in the engineers *nil*, in the infantry 8·68, and the Garrison Staff and Departments *nil*. And the constantly sick rate for these four arms of the service was 42·20, 23·73, 57·54, and 6·49 respectively.

The admission ratio of men under 20 years of age was 848·8 per 1,000, between 20 and 25 years 1128·4, in the next quinquennium 914·4, and over 30 years, 1,050·6.

The death rate of those men under 20 years was *nil*, between 20 and 25 years it was 8·11, between 25 and 30 years 9·78, and over that age 25·31 per 1,000.

As compared with the previous year mortality decreased among men between 20 and 25 years of age and also in the next quinquennium, but increased in those over 30 years.

With regard to service in the Command, the admission ratio of men in their first year of service was 1063·8, in the second year 1425·5, in third year 977·3, and over that period 571·4.

The mortality rate in the 1st year of service was 8·84, in the second and third year *nil*, and in men over 3 years 28·57 per 1,000.

In Abstract XII. will be found the principal statistics of sickness and mortality arranged according to groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Eruptive fevers* caused no admissions during the years.

Enteric fever caused 10 admissions and 2 deaths, being in the ratios of 7·9 and 1·59 respectively, lower than the ratios for previous year, and also below the sexennial average. Of the cases 8 (one fatal), occurred at Colombo, and 2 (one fatal), at Trincomali. The disease was in every case believed to have been contracted in the native villages, and was not due to insanitary barracks or quarters.

Simple Continued Fever caused 84 admissions and 2 deaths, giving ratios of 66·6 and 1·59 per 1,000 respectively. This is rather higher than in previous year. The majority of the cases were mild.

Dysentery caused 17 admissions and 3 deaths, being lower than previous year in the admission rate by 16·1, but higher in death rate by 2·37.

Malarial Fevers caused 85 admissions, being in the ratio of 67·4 per 1,000, which is below the previous year by 12·5. 35 cases occurred at Colombo, 27 at Trincomali, and 23 at Kandy.

Venereal Diseases.—There were 127 admissions for *primary syphilis*, being a ratio of 100·7, or an increase of 9·6 over previous year. Including simple venereal ulcer, the ratio of admission for primary venereal sores was 141·9, an increase over previous year of 26·8, but below the sexennial average by 23·5. *Secondary syphilis* caused 40 admissions, a ratio of 31·7 per 1,000, being less than previous year by 49·0.

Gonorrhœa caused 186 admissions, being in the ratio of 147·5 per 1,000, which is higher than the previous year by 52·4, and above the sexennial rate by 15·2. Including all forms of venereal disease, the admission ratio was 321·1, an increase of 30·2 over previous year, and a decrease of 33·1 under the sexennial average. The total amount of constant inefficiency from these diseases was 19·69, less than previous year by 1·96.

Parasitic Diseases gave 5 admissions, 3 for tape-worm, 2 for ascarides.

Alcoholism gave 3 admissions, the same as previous year.

Debility gave 18 admissions, a decline of 4·1 below ratio for previous year.

Rheumatism caused 37 admissions, being higher than ratio for previous year by 6·9.

Tubercular Diseases caused 4 admissions, all lung affections.

LOCAL DISEASES.—*Diseases of the Nervous System* caused 5 admissions. There were no deaths. The cases were 4 neuralgia and 1 paralysis.

Diseases of the Eye caused 29 admissions, or a ratio of 23·0 as compared with 9·6 in previous year; 23 admissions were for conjunctivitis.

Diseases of other Organs of Special Senses caused 39 admissions, of these 34 were for inflammation of the external meatus.

Diseases of the Circulatory System caused 12 admissions, a ratio of 9·5, higher than in previous year by 3·1. Most of the cases were due to palpitation.

Diseases of the Respiratory System caused 37 admissions, and 1 death (from pleurisy). The admission rate was 29·3, being less than in previous year by 13·9. There were 29 cases of bronchitis and 3 of pleurisy.

Diseases of the Digestive System caused 149 admissions, a ratio of 118·1 per 1,000, which is higher than that of the previous year by 29·4. The principal cases were dyspepsia, 45; diarrhœa, 39; and hepatic affections, 24. There was one death from hepatitis.

Diseases of the Lymphatic and Glandular System caused 63 admissions, or a ratio of 49·9 per 1,000, being an increase of 20·3 over previous year. All the cases were due to inflammation or suppuration of the inguinal glands.

Ceylon.

Urinary Diseases gave one admission for inflammation of the bladder, and *diseases of the generative system* caused 62 admissions, of which 52 were cases of simple venereal ulcer. The admission rate is 49·2, being an increase of 6·8 over previous year.

Diseases of the Organs of Locomotion gave only 5 admissions, a decrease in ratio of 3·2 below last year.

Diseases of the Skin caused an admission rate of 91·2 per 1,000, being 20·9 above rate for previous year. The principal causes were boils, ulcers, and eczema.

Injuries caused 127 admissions and 3 deaths (accidental drowning). The admission rate being greater by 27·2 than in previous year. The chief causes were contusions, wounds, and sprains.

Invaliding.—The number of men invalided to England was 11, being at the rate of 8·72 per 1,000, which is lower than that of last year by 26·45 and than the previous decennium by 22·14. The highest rate of invaliding in any particular corps was 160·00 in 1st Battalion, Gordon Highlanders, and the lowest 3·34 in 2nd Battalion, Royal Warwickshire Regiment. Six of the invalids, or 8·11 per 1,000, were between 20 and 25 years of age; 3, or 7·33, were between 25 and 30; and 2, or 25·32 per 1,000, were over 30 years of age. With regard to service in the Command 3 men were in their first year of service, 2 in their second year, 2 in their third year, and 4 men above three years' service. The causes of invaliding were: tubercle of lung, 4; debility, 3; secondary syphilis, 1; conjunctivitis, 1; hepatitis, 1; and contraction of tendons, 1.

The number of men finally discharged as medically unfit for further service was 7, equal to a ratio of 5·55, lower by 16·83 than the corresponding rate in the previous year, and by 9·25 than the decennial average rate. Five of the men were discharged on account of tubercular disease of the lung, and two for debility.

Officers.—In an average strength of 54 officers there were 18 attacks of illness, and 1 death. One officer was invalided to England. The ratio of sickness per 1,000 was 333·3, being a decrease of 503·4 below rate for previous year. Among the cases were 2 of enteric fever (1 death), 2 for simple continued fever, 1 for ague, and 1 for dysentery.

Women.—Average strength 62, and 57 attacks of illness. The principal causes of sickness were debility and fevers, 1 death occurred from heat apoplexy.

Children.—The average strength was 117, and the number of cases of sickness 103, and there were 4 deaths, being in the ratios of 880·3 and 34·19 respectively. The principal causes of illness were fevers, debility, conjunctivitis, bronchitis, and diseases of dentition. The deaths were due to convulsions, 1; teething, 1; diarrhœa, 1; quinsy, 1.

Sanitary Conditions.—The Senior Medical Officer, Brigade Surgeon Lieut. Colonel J. Maturin, reports that the sanitary condition of the barracks at all the stations has been satisfactory, and every effort has been made to ensure the vicinity of the barracks being kept in a healthy state. No over-crowding, and ventilation generally good. Water supply satisfactory, and at Kandy it was laid on from the municipal mains to the Hospital and Barracks, during the year. The dry-earth system is in use in all stations. Latterly "coir" dust has been substituted for dry-earth, and works very well. The vegetable ration has been improved, and the potato ration increased. The following improvements have been carried out during the year: At Colombo, a grocery, meat, and wood store, erected for the Army Service Corps, old Artillery offices re-constructed into quarters for 3 officers. Guard-rooms erected at Galle and Battenberg batteries.

At Trincomali additional accommodation has been provided at Ostenberg Ridge, consisting of quarters for a field officer, medical officer, and 4 regimental officers; also a medical inspection room.

II.—BLACK TROOPS.

Ceylon.

The black troops consisted of two companies of Asiatic Artillery, the average strength being 189, and the Ceylon Company Submarine Miners, Royal Engineers, with an average of 38. Total strength 227. The artillery are distributed between Colombo and Trincomali, and the engineers are quartered at the latter station.

The admissions into hospital were 324 in number, being a ratio of 1427·3 per 1,000, as compared with 1423·3 in previous year. The average number constantly sick was equal to 45·24 per 1,000, an increase of 18·59 over last year.

The principal causes of illness were cutaneous affections, fevers, dysentery, bronchitis, and rheumatism. One death occurred from dysentery, and six men were discharged as invalids, for rheumatism 2 cases, and one each from debility, paralysis, mania, and inflammation of connective tissue.

XI.—ON THE HEALTH OF THE TROOPS SERVING IN CHINA.

Sickness and Mortality.

I.—White Troops.

China.

The average strength of the troops serving in the Command was 1,382. The force consisted of the 25th Company, Southern Division, and District Establishment, Royal Artillery, detachments Royal Engineers, Medical Staff Corps, Ordnance Store Corps, and Garrison Staff throughout the year. The 1st Battalion, Argyll and Sutherland Highlanders, up to the 25th January, when it left for England, having been relieved by the 1st Battalion, Shropshire Light Infantry, from Egypt.

The subjoined table gives the principal statistics of sickness and mortality among these troops:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
1,382	1,763	16	1	17	12	8	83·06	1275·7	12·30	8·68	5·79	60·10

Compared with previous year's rates an increase of 38·1 per 1,000 has occurred in the admission rate and one of 1·81 in the death rate, also one of 6·00 in the ratio of those constantly sick; compared with the previous decennium there is an increase in the above rates of 190·2, 2·55, and 8·72 respectively. The average sick time to each soldier was 22·00 days, a slight increase over previous year, and the average of each case of sickness was 17·24 days, also a slight increase.

The health statistics for the different corps stationed in the Command compared with last two years are shown in following table:—

—	Ratio per 1,000.											
	Admitted.			Died.			Invalided.			Constantly Sick.		
·	1890.	1891.	1892.	1890.	1891.	1892.	1890.	1891.	1892.	1890.	1891.	1892.
25th Co. South. Divn. R.A.	—	2298·2	1802·0	—	—	9·90	—	—	39·60	—	83·51	76·98
Royal Engineers	637·0	690·3	429·5	7·40	6·45	12·82	—	12·90	6·41	29·77	29·16	21·54
1st Shropshire Light Infantry.	—	—	1389·3	—	—	12·30	—	—	2·24	—	—	67·30
1st Argyll and Suth. Hghlndrs.	1439·1	1266·5	1061·5	8·61	8·81	—	29·06	28·63	15·38	57·60	54·13	41·38
Ordnance Store Corps.	800·0	1714·2	125·0	—	142·85	—	—	—	—	18·00	64·29	12·50
Medical Staff Corps.	175·1	470·5	222·2	—	—	55·55	—	58·24	—	3·53	14·70	12·22
Garrison Staff and Departments.	625·0	83·3	250·0	—	—	125·00	—	—	—	13·75	1·67	3·75

China.

Taking sickness and mortality according to age, the admission rate of men under 20 years was 1147·1, between 20 and 25 it was 1672·2, from 25 to 30 975·6, from 30 to 35, 531·6, and over that age 542·8. There was no mortality in those under 20 years, and in the next four periods the death ratios were 7·58, 13·91, 25·31, and 28·57 respectively. With regard to length of service in the Command the admission rate in those under 1 year's service was 1368·8, in the 2nd year 1071·4, 3rd year 1078·0, and over that period 885·7, the death ratios for these periods being 11·36, 16·81, *nil*, and 28·57 per 1,000 respectively. In Abstract No. XIII. will be found the principal statistics of sickness and mortality, arranged according to the different groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—No case of *small-pox* occurred.

Simple continued Fever caused 5 admissions, calling for no remark.

Enteric Fever caused only 1 admission, and the man made a satisfactory recovery.

Dysentery caused 8 admissions as against 14 in previous year.

Malarial Fevers account for a large number of admissions, being 660 or 477·6 per 1,000, almost the same as in previous year, but slightly above the sexennial average. The cases were ague 507, remittent fever 152, and malarial cachexia 1. There was an increase in the average daily sick and average sick time to each soldier of 1·92 and ·71 per 1,000 respectively. Remittent fever was very prevalent during the months of July and August, and was of a severe type; the majority of the cases came from a musketry camp at Kowloon, and were the subject of a previous report; 7 deaths occurred from this cause.

Septic Diseases were represented by two cases of erysipelas, both slight cases.

Venereal Diseases.—The following table shows the admissions among the troops for venereal diseases from 1886 inclusive :—

Disease.	1886.*	1877.*	1888.	1889.	1890.	1891.	1892.	Remarks.
Primary syphilis - -	25	11	19	37	35	74	65	*Contagious Diseases Act in force till September 1887.
Secondary syphilis - -	76	40	40	72	50	77	41	
Ulcer of penis - - -	16	57	159	184	148	129	191	
Gonorrhœa - - -	106	114	160	150	171	137	194	
Total - -	223	222	378	443	404	417	491	

It will be seen from the above that these diseases still continue to cause a large number of admissions, as compared with the years preceding the repeal of the Contagious Diseases Act in September 1887.

Primary syphilis with 65 admissions against 74 in previous year, showed a slight decrease in the ratio, which was 47·0. Simple venereal ulcer gave 191 admissions as against 129 in previous year. Including both these causes, the admission rate for primary venereal sores was 185·2, an increase on previous year of 33·0, and over previous sexennium of 69·1.

Secondary syphilis caused 41 admissions, as against 77 in previous year. This shows a marked decrease in the rate, 28·0 per 1,000.

Gonorrhœa caused 194 admissions, or a rate of 140·4, being an increase over previous year of 37·7. Including all forms of venereal disease the total admission rate was 355·3, or an increase of 42·7 over previous year, and of 84·2 over the previous sexennial average period. The total amount of constant inefficiency from this cause was equal to 26·69 per 1,000, or much the same as in previous year, but an increase of 7·31 over the previous sexennial average period.

Parasitic Diseases caused one admission, a case of tænia solium.

Alcoholism caused 2 admissions. There were 3 in the previous year.

Debility caused 31 admissions, an increase on the previous year's rate of 15·7 per 1,000.

China.

Rheumatism caused 18 admissions as against 35 in previous year.

Tubercular Diseases caused 5 admissions as against 3 in previous year. One death occurred. All the cases were for lung disease.

The remaining admissions in this group of general diseases were 3 of non-malignant new growth and 7 of anæmia.

LOCAL DISEASES.—*Diseases of the Nervous System* caused a ratio of 7·3 for admissions; amongst the cases were 2 mania and 1 melancholia.

Diseases of the Eye caused only 5 admissions, and *diseases of the ear* 14 admissions.

Diseases of the Circulatory System gave a ratio of 15·2 per 1,000, a decrease of 2·0 from the last year's rate, but above the average. Two deaths occurred from valvular disease of the heart.

Diseases of the Respiratory System.—45 admissions are recorded, equal to 32·6 per 1,000, a decrease of 24·4, as compared with the corresponding rate of last year, but above the sexennial average rate. 37 of the admissions were for bronchial catarrh.

Diseases of the Digestive System were the cause of 121 admissions, or 87·6 per 1,000, which is above the previous year's rate by 8·9, but below the sexennial average rate. The principal causes of admission were diarrhœa 27, jaundice 21, sore throat 18, and dyspepsia 17 cases.

Diseases of the Lymphatic and Glandular System caused an admission rate of 26·1 per 1,000, almost identical with the previous year's rate.

Diseases of the Urinary System were represented by 3 admissions, as compared with 2 in the preceding year.

Diseases of the Generative System.—There is a large increase under this heading, the admissions for 1891 and 1892 being 143 and 203 respectively, or an increase in the ratio of 39·8 per 1,000. This is due to the large number of cases of ulcer of the penis. One death occurred from stricture of urethra.

Diseases of the Organs of Locomotion gave only 4 admissions, as against 9 in previous year.

Diseases of the Connective Tissue gave 25 admissions, a decrease in the ratio of 16·4 per 1,000.

Diseases of the Skin caused 97 admissions as against 58 last year. This increase is principally due to the number of cases of boils and whitlow.

Poisons.—Under this head there was a single admission for poisoning by vegetable substances.

Injuries, General.—There were 5 admissions, 4 from heat stroke, one fatal, and 1 from multiple injury. Three deaths from drowning also occurred, due to wreck of P. and O. steamer "Bokhara."

Local Injuries shows a slight decrease in number of admissions below previous year, the total being 128.

Invaliding.—The total number of invalids sent home during the year (either for final discharge or for change) was 12 as against 29 in previous year. This marked decrease is due to the Argyll and Sutherland Highlanders returning to England, rendering unnecessary the invaliding of some of the men of that corps. The majority of the men were from 20 to 30 years of age, and had from 1 to 3 years' service in the Command. The principal causes were secondary syphilis, rheumatism, tubercle of lung, and palpitation. The number of men discharged during the year as medically unfit for further service was 8, or 5·79 per 1,000, less than the previous year's rate by 4·70. The principal disabilities necessitating final discharge were diseases of the circulatory system, 3 cases, and tubercular diseases 2.

Officers.—There were 59 admissions from sickness, as against 32 in previous year, or an increase in the ratio of 278·5 per 1,000. The chief causes were malarial fever, bronchial affections, and diseases of digestion. There were 6 deaths, one from dysentery, one from remittent fever, and 4 from drowning in loss of P. and O. steamer "Bokhara."

Women.—There were 51 admissions and one death (from cirrhosis of liver). The admission rate is much below that of previous year.

Children.—There were 83 admissions as against 175 last year, a very marked decrease; also a decrease in the death-rate of 48·24 per 1,000.

Sanitary Conditions.—The Sanitarium has proved very beneficial; the long needed verandah on the north side is now nearly completed. Better accommodation for officers is still required. A new well has been sunk at the Whitfield Barracks, Kowloon. The new hospital, the plans for which are still under consideration, is much needed. *China.*

The Station Hospital at Kowloon is equipped for 30 beds, and is supplemented by a mat shed, which is used as a non-dieted hospital. Plans are under consideration for improving the accommodation of the permanent hospital.

The plans for the barracks of the Hong Kong regiment at Kowloon have been sent home for approval.

II.—ASIATIC TROOPS.

The black troops consisted of the corps of Asiatic Artillery, late China Gun Lascars, average strength 367, the Chinese Company, Submarine Miners, Royal Engineers, average annual strength 50, and the Hong Kong Regiment landed in the Colony on 7th May with an average strength of 621. The total average strength was 1,038, and there were 1,103 admissions into hospital, or 1,062·6 per 1,000, 16 deaths, or 15·41 per 1,000, and 35·28 constantly sick, or 33·99 per 1,000.

Compared with the corresponding ratios in the preceding year, there was an increase of 236·2 in the admission rate, a decrease of 5·25 in the death-rate, and an increase of 10·44 in the constantly sick rate.

The principal causes of sickness were malarial fevers, 331 cases, including 10 of remittent fever, venereal affections 65 cases, dysentery 101, diseases of the respiratory and digestive systems 93 and 91 respectively, and skin diseases 154 cases.

The deaths were seven from dysentery, three from diseases of the digestive system, two from malarial fevers and debility respectively, and one each from diseases of the circulatory and respiratory systems.

XII.—ON THE HEALTH OF THE TROOPS SERVING IN THE STRAITS SETTLEMENTS.

Sickness and Mortality.

I.—White Troops.

Straits Settlements.

The average strength of the force in the Straits Settlements was 1,205. The troops in garrison were the 26th Company, Southern Division, Royal Artillery, from 1st January 1892 to 31st December 1892, and the 2nd Battalion Northamptonshire Regiment, from 1st January to 14th November 1892, when they proceeded to England, being relieved by the 2nd Battalion Lincolnshire Regiment from India on the 11th November, and detachments Royal Engineers, Departmental Corps, and Garrison Staff. The distribution was the Royal Artillery at Fort Canning, Blakan Mati, and outlying forts; six companies of Infantry at Tanglin, and two companies at Penang. The Royal Engineers at Pulo Brani, and departmental corps at various stations.

In the following table the principal health statistics of these troops are given:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratio per 1,000 of Strength.				
		In the Command.	Of Invalids	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids Sent Home.	Invalids finally Discharged.	Constantly Sick.
1,205	1,209	11	2	13	24	12	77·79	1003·3	10·79	19·92	9·96	64·55

Compared with the return for the previous year the admission ratio has decreased by 148·6 per 1,000, the constantly sick rate by 28·93, but the death rate is higher by 6·07 than the previous year, owing to an outbreak of enteric fever.

The average sick time to each soldier was 23·63 days, being less than the rate for preceding year by 10·49. The average duration of each case of sickness was 23·55 days, a decrease below previous year of 6·07.

The principal statistics of separate corps will be found in Abstract XL.

In the Royal Artillery the admission rate was 947·8, the death rate 14·22, and the constantly sick rate 75·12 per 1,000. In the 2nd Battalion Lincolnshire Regiment the admission, death, and constantly sick rates were 1280·3, 28·03, and 64·58 respectively.

Taking the sickness and mortality according to the age of the troops it is found that in those under 20 years of age, the admission ratio was 405·0, in those from 20 to 25, 1085·3, from 25 to 30, 1154·3, and 30 years and upwards, 458·7; the heaviest rates were in those between 25 and 30 years.

With regard to length of service in the Command, the admission rate of those in their 1st year was 1193·4, and in the next three periods, 2nd, 3rd, and over 3 years, 754·0, 1086·5, and 1009·6 respectively. The majority of deaths occurred in 3rd year of service.

In Abstract XIV. will be found the sickness, mortality, and invaliding arranged according to the different groups and orders of diseases.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—There were ten admissions for enteric fever and six deaths. The disease is attributed to eating uncooked vegetables, cultivated with manure, in those cases occurring in the Command. The cases in the Lincolnshire Regiment were contracted in India before arrival.

Other Continued Fevers showed 135 admissions, an increase of 102·6 in the ratio, due to the usual intermittent fever altering its type. There were no cases of *cholera*, and only 10 cases of *dysentery*, with 1 death.

Malarial Fevers caused 101 admissions for intermittent fever and 2 for remittent. No deaths; the type of fever was generally mild. The ratio per 1,000 is less by 57·9 than in previous year.

Primary Syphilis shows 174 admissions, or 144·4 per 1,000, an increase in the ratio of 46·8 over previous year. The sores are very troublesome, and of a sloughing character.

Including *simple venereal ulcers*, the admission ratio from primary venereal sores was 160·6, a decrease of 100·8 below the previous year.

Secondary Syphilis.—There were 110 admissions during the year, or 91·3 per 1,000, a decrease of 98 admissions below last year, and a decrease in the ratio per 1,000 of 72·5. Twelve men were invalided for various forms of the disease.

Gonorrhœa caused 142 admissions, or a rate of 117·8 per 1,000, being below rate for previous year by 29·4. Including all forms of venereal disease, the total admission rate was 369·7, a decrease below the previous year of 202·7, and of 70·8 below previous sexennial period. The rate of constant inefficiency was 33·28.

Alcoholism caused 8 admissions, a decrease on last year.

Debility.—There were 19 admissions, being a slight decrease below last year.

Rheumatism gave 19 admissions, a slight increase over previous year.

Tubercular Diseases gave 3 admissions, all invalided to England.

Other Diseases comprised 2 cases of non-malignant new growth.

LOCAL DISEASES.—*Diseases of the Nervous System* caused 16 admissions, a rate of 13·4 per 1,000. The cases comprised 1 neuritis, 2 vertigo, and 11 neuralgia. There were 2 admissions for mental disease, 1 mania, and 1 dementia.

Diseases of the Eye caused 9 admissions, a decrease below previous year.

Diseases of other Organs of Special Senses caused 12 admissions, also a decrease below previous year.

Diseases of the Circulatory System caused 8 admissions, 4 for valve disease, 3 palpitation, and 1 rupture of heart. The ratio was 6·6.

Diseases of the Respiratory System gave 43 admissions, a rate of 35·7. This is an increase of 16·8 on last year. The admissions were chiefly due to bronchitis. The only death was due to pneumonia.

Diseases of the Digestive System caused 114 admissions, a rate of 94·6, a slight increase over previous year. The causes were principally dyspepsia, diarrhœa, and sore throat.

Diseases of the Lymphatic and Glandular System caused 37 admissions, a decrease below the rate for previous year of 2·4. All the cases were due to inflammation and suppuration of the inguinal glands.

Diseases of the Generative System.—There were 41 admissions, or a rate of 34·0, this is a marked decrease below previous year.

Diseases of the Organs of Locomotion caused 7 admissions, an increase over last year.

Diseases of the Connective Tissue gave 38 admissions, or a rate of 31·5 per 1,000, much the same as previous year.

Diseases of the Skin.—There were 49 admissions, or 40·7 per 1,000, a decrease below last year of 11·3.

Injuries caused 97 admissions, or a rate of 80·5, being slightly less than last year. The causes of admission were chiefly wounds, contusions, and sprains.

Invaliding.—The number of men invalided home during the year was 24, or a ratio of 19 92, being lower than in previous year by 15·51 and than the sexennial average rate by 4·60. Eleven cases were from the Royal Artillery and 13 from the Northamptonshire Regiment. No other corps had any invalids. With regard to age, none were invalided under 20 years, 13, or 19·12, from 20 to 25 years, 9, or 26·71, from 25 to 30 years, and 2, or 18·35, from 30 years upward. As to length of service in the Command, none had under 1 year's service, 3, or 8·11, under two years', 12, or 45·11, under 3 years', and 9, or 43·48, over 3 years' service. The principal causes of invaliding were secondary syphilis, tubercle of lung, and heart disease.

Officers.—Strength 48, admissions 34, or 708·3 per 1,000. The principal causes were simple continued fevers and local injuries. Two were invalided, one for debility and one for eclampsia. No deaths.

Women.—Strength 35. Admissions 25. The principal causes were fevers and debility. The admission ratio was 714·3. There were no deaths.

Children.—Strength 48. Admissions 15. The ratio was 312·5. Principal causes fevers, bronchitis, and debility. There were 2 deaths, one each from scrofula and infantile convulsions.

Sanitary Conditions.—The Senior Medical Officer, Brigade Surgeon Lieut-Colonel M. Cogan, reports that sanitation was under all circumstances satisfactory. Small-pox had been prevalent among the native inhabitants at Penang, but did not appear among the troops.

The accommodation in Barracks and Hospitals was ample. The ventilation and means of ablution satisfactory. At Blakan Mati, Barracks have been constructed, and during the year a verandah has been erected on the weather side. The drainage is well looked after and the surrounding jungle kept cut down. At Tanglin the gymnasium is regularly attended, with very good results to health. The municipal water has not yet been supplied, and the drinking water comes from shallow wells. It is well filtered before use. It is contemplated to build an infectious hospital about 200 yards from the Station Hospital.

At Penang some minor improvements have been made in the ventilation of the Barracks, also in the direct conveyance of municipal water to the kitchens, and in covering in the passage of water for bathing purposes, and thus preventing its pollution by the native population.

II.—ASIATIC TROOPS.

The troops quartered in the Command during the past year were the Singapore company, Royal Engineers, at Pulo Brani, and Asiatic Artillery at Blakan Mati. Total strength 165. Total admissions 119. One death occurred from peritonitis, and two of the Asiatic Artillery were invalided for debility and anæmia.

XIII.—ON THE HEALTH OF THE TROOPS SERVING IN INDIA.

Sickness and Mortality.

India.

The average strength of the warrant officers, non-commissioned officers and men in India was 68,045; the admissions into hospital were 103,070; and the deaths 1,197 of which 1,151 took place in India, and 46 (being those of invalids) on the passage to or after arrival in England. The average number of constantly sick was 5707·81. The rates from these numbers are, for admissions 1514·7, for deaths 17·59, and for constantly sick 83·88 per 1,000 of the strength.

The sickness for each of the three Commands is shown in the following table:—

—	Average Annual Strength.	Admitted into Hospital.	Deaths			Invalids sent Home.	Invalids discharged the Service.	Average constantly Sick.
			In India.	Of Invalids.	Total.			
Bengal - -	42,161	66,577	828	22	850	953	517	3657·81
Madras - -	13,182	16,241	159	9	168	437	178	1098·41
Bombay - -	12,702	20,252	164	15	179	271	149	951·59
Total - -	68,045	103,070	1,15	46	1,197	1,661	841	5707·81
Ten years, 1882—91 - -	621,968	895,626	8,749	414	9,163	16,437	8,327	46319·00

continued.

—	Ratio per 1,000 of Mean Strength.					Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.
	Admitted.	Died.	Invalided Home.	Invalids discharged.	Constantly Sick.		
						Days.	Days.
Bengal - -	1579·1	20·16	22·60	12·26	86·76	31·75	20·11
Madras - -	1232·0	12·74	33·15	13·50	83·33	30·50	24·75
Bombay - -	1594·4	14·09	21·34	11·73	74·92	27·42	17·15
Total - -	1514·7	17·59	24·41	12·40	83·88	30·70	20·27
Ten years, 1882—91 - -	1440·0	14·73	26·43	13·39	74·47	27·18	18·88

I.—Bengal.

Bengal.

The average strength of the troops serving in the Command during the year was 42,161 warrant officers, non-commissioned officers and men, differing but very slightly from the strength in the previous year.

In the following table are given the more important statistics of sickness and mortality among the troops during the year:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally discharged.	Average constantly Sick.
42,161	66,577	828	22	850	953	517	3657·81	1579·1	20·16	22·60	12·26	86·76

Compared with corresponding ratios in the preceding year, an increase of 168·4 per 1,000 has occurred in the ratio of admission, one of 5·49 in that of constantly sick, and one of 2·80 in the death rate. Compared with average similar ratios for the previous ten years the admission rate shows an increase of 67·9, and the ratio of constant inefficiency through sickness one of 10·95, and the death rate one of 5·17 per 1,000. The average sick time to each soldier was 31·75 days, which is higher by 2·09 than the corresponding period in the previous year, but longer than the average period for the preceding ten years by 4·08 days. The average duration of each case of sickness was 20·11 days, and was less than the corresponding period in 1891 by ·92 of a day, but longer than the decennial average period by 1·80 days.

The loss to the Command by death and invaliding to England was 1,781 warrant officers, non-commissioned officers and men, being in the rate of 42·24 per 1,000, which is higher than in the previous year by ·20, and the loss to the army by death and final discharge as medically unfit for further service among troops in the Bengal Presidency was 1,367, equal to 32·32 per 1,000, a decrease of ·34 on the return for the previous year.

In Abstract XVI. are given the more important of the statistics of the sickness and mortality in the several military districts of the Command.

It will be seen that the highest admission rate was 2,000·0 per 1,000 of strength in the Bundelkhand district, the next being 1920·3 in the Lahore district, 1838·3 in the Peshawar district, and 1823·5 in the Allahabad district. In the three first named the principal cause of sickness was malarial fevers, which in the Peshawar district accounted for almost two thirds of the total admissions of the year. In the Allahabad district venereal and malarial fevers together contributed nearly one half of the sickness. The lowest admission ratio occurred, as in the previous year, in the Sirhind district, excluding troops on the line of march from the comparison. This was 1,208·0 per 1,000, and higher than the preceding year's ratio by 258·9, the next lowest being 1355·9 in the Rohilkhand district, 1496·9 in the Presidency district, which stood highest in 1891, and 1498·4 in the Narbudda district, which stood third highest in the preceding year. It may be added that while nine districts show an increase in the admission ratios, ranging from 14·0 per 1,000 in the Rohilkhand district to 814·3 per 1,000 in the Peshawar district, only three show a decline in this respect, namely, the Presidency a decrease of 242·4, the Bundelkhand of 196·4, and the Quetta district of 88·8 per 1,000.

The highest ratio of mortality was 36·79 in the Peshawar district, more than one half the number of deaths having resulted from malarial fevers. The next in order were 26·79 in the Lahore district, due principally to enteric fever and cholera, 21·29 in the Bundelkhand district, due to enteric fever, and 20·56 in the Rohilkhand district, where almost one half the deaths were

Bengal.

caused by enteric fever. The Quetta district had the lowest mortality rate, 9·95, the Presidency district following with 11·55, and Narbudda with 13·96 The most notable increases over the ratio of the preceding year were those of the Peshawar district, 15·31; Lahore district, 11·44; and Bundelkhand district, where the ratio was more than double that of 1891. Of the districts showing reduced ratios the most marked was a decrease of 11·89 in the Allahabad district explained by the fact that cholera prevailed epidemically there in the previous year when the district had the highest mortality ratio in the Command.

Abstract XVII. contains the statistics of the sickness and mortality at the different stations in the Command.

Comparing first the stations in the plains having an average annual strength of over 150 men, the highest admission ratio is found to be 2582·4 at Amritsar, this being 1127·4 higher than its ratio in the previous year, and 177·3 than the decennial average. Nowgong comes next with a ratio of 2526·5, an increase of 531·3 over the previous year's admission rate and of 712·0 over the decennial average; then Delhi with 2524·8, an increase of 537·5 on that of 1891, but lower by 512·2 than the average rate of the preceding 10 years. At all these stations malarial fevers caused more than one half of the total number of admissions. Sialkot and Mian Mir also had high admission rates, the former 2419·6 higher by 447·3 and 911·2 respectively in the two comparisons; and the latter 2315·0, which, although greater than the preceding year's ratio by 462·2, was a fall of 211·0 from the 10 year's average. Malarial fevers and venereal affections accounted for more than half the admissions into hospital at these two stations. The lowest admission rate was 911·2 at Roorkee, this being a decline in both comparisons of 403·8 and 756·0 respectively. The ratios next above were 1132·1 at Sitapur, lower by 154·7 and 211·1; 1193·5 at Jullundur, lower by 66·6 and 195·9; 1272·0 at Calcutta, lower by 366·6 and 172·2; and 1285·2 at Bareilly, lower by 98·1 and 72·3 respectively, as compared with the previous year's ratio and the decennial average.

Of the 35 stations in the plains taken for comparison in the above 21 had higher admission rates than in the previous year, varying from an increase of 4·7 per 1,000 at Jubbulpore to one of 1234·9 at Nowshera the most marked besides those already mentioned, being an increase of 965·6 at Peshawar, of 570·9 at Multan, of 537·0 at Ferozepore, of 528·0 at Agra, and of 527·7 at Cawnpore. At Nowshera and Peshawar malarial fevers caused quite five-eighths, and at Ferozepore more than half the number of the total admissions; at Multan and Cawnpore malarial fevers and venereal affections, and at Agra influenza, simple continued and malarial fevers, and venereal affections were the principal causes of inefficiency.

The only other noteworthy instances of decreased ratios, besides those already mentioned, were those of Barrackpore, the ratio of which was lower by 322·4, and of Saugor, which shows a decrease of 612·5. These two stations stood first and second on the list in the previous year; and the improvement in the admission rates was owing to the fewer admissions for malarial fevers.

Comparing the present year's admission rates with the average ratios of the preceding 10 years, it is found that 20 stations show increased and 15 decreased ratios. In the former group the following increases were the most notable:—Sialkot 911·2, Nowshera 788·8, Nowgong 712·0, Campbellpore 685·3, Multan 499·6, and Benares 451·3; and of the latter the following decreases:—Roorkee 756·0, Delhi 512·2, Fatehgarh 442·7 and Muttra 410·3.

The highest ratio of mortality occurred at Peshawar, viz., 56·71 as compared with 20·70 in the preceding year, and 15·58 the decennial average. There were 93 deaths, of which 54 were from remittent fever, 13 from cholera, and 9 from enteric fever. Ferozepore follows with a ratio of 42·58 as against 15·02 and 11·03 the preceding year's ratio and the decennial average respectively. The number of deaths was 41, 18 being from cholera, and 7 from enteric fever. The next in order was Mian Mir with 38·27 against 9·81 and 21·10 in the two comparisons, there having been 39 deaths, 16 from cholera, and six from enteric fever. Delhi had a ratio of 36·30 against 15·82 in 1891, and 18·23 the 10 years' average; and Jhansi 34·93 against 10·14 and 21·02 in the two comparisons.

Bengal. The lowest mortality ratio was 4·42 at Nowgong, being a decrease of 2·79 on the previous year and of 8·44 on the decennial average. This is followed by 4·61 at Jullundur, which had a ratio of 23·92 in 1891, the average for the preceding 10 years being 14·93. The next above was Saugor with 5·52, which is fractionally lower than in the previous year, and lower by 3·26 than the decennial average. Fort Allahabad also had a ratio of 5·52 against 19·80 in the preceding year and 16·14 the decennial average.

Sixteen stations had higher ratios than in the preceding year, the most important of which have already been referred to. It may be mentioned, however, that the death rate of Multan, 20·70, and that of Sitapur, 15·95, were more than double the corresponding ones of 1891, while that of Campbellpore, 18·05, was five times its ratio of the previous year. Of the 19 stations showing decreased ratios the most notable were Allahabad and Jubbulpore, being less than a third, and Amritsar about a third of the previous year's ratios.

Compared with the decennial averages, 18 stations had higher ratios, the most important of which (Peshawar, Ferozepore, Mian Mir, Delhi, Jhansi, and Bareilly) have been previously mentioned. Of the remaining 17 stations having reduced ratios besides Nowgong, Jullundur and Fort Allahabad already referred to, Allahabad (cantonment) shows a decline of 10·10, Jubbulpore of 8·15, and Calcutta of 6·55.

Taking now the seven hill stations to which convalescents are sent annually for the recovery of their health, it is found that Dalhousie leads with an admission rate of 1342·6; this, however, is a decline from the corresponding ratios of both the previous year and the ten years' average by 179·1 and 129·3 respectively. It is to be mentioned here that of the average annual strength of 759 men, only 297 were sent up as convalescents, the remaining 462 comprised a wing of the 2nd King's Own Scottish Borderers and detachments of various corps which occupied the annual "standing camp" at that station." Kasauli had the second highest ratio for admissions, 1305·6, which is less by 96·8 and 373·7 respectively than in the previous year, and the decennial average. Murree, which stood highest in this category last year, comes third, the ratio 1222·9 being a fall of as much as 326·2 from that of the previous year, and of 124·5 from the ten years' average. Excepting Pachmarhi and Darjeeling, which show an increase of 54·8 and 27·3 respectively, the ratios of all these stations compare favourably with those of the previous year, and they are without exception considerably lower than the average of the preceding 10 years, the greatest decrease, 753·5, being at Landour, that at Pachmarhi 570·8, and at Naini Tal 425·8.

At Dalhousie, Kasauli, and Murree the principal causes of sickness were malarial fevers, venereal affections, and diseases of the digestive system; the cases of ague at Kasauli were, however, less than half those in the preceding year, this being ascribed to the earlier setting in of the rains curtailing the period of the chief prevalence of the disease in the hills. At Murree the only noteworthy circumstance was the occurrence of cholera among the officers, men, women, and children during August and September. At Pachmarhi the prevailing disease as usual was malarial fever, though there has been a great diminution in the number of cases, but the main features in the medical history of the station was the severe epidemic of enteric fever, from which disease there were 17 cases and 7 deaths. Venereal was the prevailing disease at Naini Tal, about a third of the admissions having been due to that cause, while at Darjeeling it accounted for almost one half. At Landour malarial fevers and venereal were the chief causes of illness. It must be added that the statistics of Darjeeling include those of a mountain battery of Royal Artillery (102 men of the 384 given as the strength of the station).

The highest ratio of mortality was 80·36 at Pachmarhi against 8·85 in the previous year and 7·86 the ten years' average, the number of deaths being 9, viz.:—7 from enteric fever and 2 from remittent fever. Murree, the next highest, had 51·43, against 28·90 and 30·30 respectively in the two comparisons; of the 9 deaths recorded 3 were from cholera and 2 from enteric fever; while Kasauli comes third with 40·12 against 23·67 in 1891 and 12·26 the decennial average, 4 of the 13 deaths during the year having been due to enteric fever and 2 to dysentery. The death rate of Naini Tal was 21·28, the equivalent of 4 deaths, a decrease of 16·31 and an increase of 3·58 per 1,000 in the two comparisons; that at Landour 18·87, that is 3 deaths, 2 of them from cholera, being considerably less than half the preceding year's ratio, but only fractionally so than the average; that at Darjeeling 15·63, or 6 deaths, one out of hospital, which was 4·20 higher than in 1891, but differed only slightly from the average; and that at Dalhousie 13·18, a decline of 3·73 from the previous year's ratio, but higher by 1·28 than the average here, of 10 deaths 6 were from enteric fever. *Bengal.*

The principal hill stations garrisoned by healthy troops and having an average annual strength of over 150 men numbered 12 against 11 in 1891. Of these, Chaubattia, as in the preceding year, had the highest admission ratio, 1385·8, this being an increase of 88·0 per 1,000 on the previous year, but lower by 18·1 than the decennial average. Ranikhet, which stood third in 1891, comes second with 1314·4, an increase of 117·5 on that year's ratio and one of 144·1 on the average. Next in order are Subathu with 1119·6, Dagshai with 1064·0, and Jutogh with 1027·8, which were above the preceding year's ratios by 293·1, 200·9, and 230·8 respectively, but below the average of the preceding 10 years by 139·2, 34·3, and 225·8 severally. The lowest admission ratio, 693.0, occurred at Kuldana, the next above being 745·2 at Gharial and 784·2 at Ghora Dhaka, which was not occupied the previous year. The ratios of the two first named stations compare very favourably with the corresponding ones of the preceding year as well as those of the decennial average, being lower by 389·9 and 106·6 respectively than the former, and by 534·5 and 156·5 than the latter. Of the stations not mentioned above the most notable instances of differences in the ratios were—Thobba, which stood second highest in 1891, but which in the present year, with an admission rate of 1018·2, shows a decrease of 253·3 from 1891 and of 408·7 from the 10 years' average; and Solon, which with the lowest admission rate in the previous year now has a ratio of 921·7, an increase of 224·7, but lower than the average by 75·6.

At Chaubattia and Ranikhet the principal causes of sickness were venereal affections, diseases of the digestive system, and simple continued fever; at Subathu venereal and enteric and simple continued fevers; while at Dagshai, in addition to the diseases just named, malarial fevers and sore throat, which prevailed in an epidemic form during April, May, and June, contributed to raise the admission rate.

The highest mortality ratio occurred at Subathu, as high as 23·92, against 2·28 in the previous year and 12·36 the average. There were 10 deaths, of which 5 were from enteric fever. The next highest was 20·08 at Dagshai as compared with 7·40 and 9·20 in the two comparisons. The ratio represents 16 deaths, 12 of which were due to enteric fever. Gharial, although coming third with 19·11, shows a decline of 8·53 from last year, but the ratio is 7·65 higher than the average. The death rate at Chakrata, representing 18 deaths, of which 11 were from enteric fever, was 18·18, or more than double that of the year before, and 7·80 greater than the average; while that at Cherat, 8·22, was nearly a fourth of the previous year's ratio, and only a half of the decennial average, and that at Thobba, a third of the former but only fractionally lower than the average. There were two deaths at Kuldana against none in 1891, the ratio, 4·65, being fractionally greater than the average.

Abstract XLI. gives the more important of the statistics of sickness and mortality of the different arms of the service as well as of the individual corps which served in the Command during the year.

The average strength of the cavalry was 3,382 men, and there were 5,227 admissions into hospital, 65 deaths, and an average constantly sick of 279·14, being respectively in the ratios of 1545·5 per 1,000 for the admissions, 19·22 for mortality, and 82·54 for constantly sick, all higher than the corresponding ratios in the preceding year by 64·4, 2·45, and 4·62 severally. The average sick time to each soldier was 30·21 days, being 1·77 days longer than in 1891, while the average duration of each case was 19·55 days, longer by ·35 of a day than in the previous year.

Bengal.

The average annual strength of the Artillery was 6,394 men, among whom there were 10,712 admissions into hospital and 125deaths, the average number constantly sick having been 546·30. The equivalent ratios per 1,000 of strength were 1675·3 for admissions, 19·55 for deaths, and 85·44 for constantly sick. The first two were 72·3 and 1·02 respectively higher than the corresponding ratios of the preceding year, but the last was fractionally lower (·75). The average sick time to each artilleryman was 31·27 days and the average duration of each case 18·67 days, both being shorter than in the preceding year, viz., by ·19 and ·95 of a day respectively.

The average annual strength of the Infantry was 30,740 men. Among these there were 49,045 admissions into hospital and 584 deaths, the average number of men constantly inefficient from sickness amounting to 2685·13. The equivalent ratios per 1,000 of strength were therefore 1595·5 for admissions, 19·00 for deaths, and 87·35 for constantly sick. Compared with the corresponding figures for the preceding year, these were all higher, viz., by 210·4, 3·10, and 7·33 per 1,000 respectively. The average sick time to each soldier was 31·97 days, 2·76 days longer than in 1891, while the average duration of each case, 20·04 days, was shorter by 1·05 days.

The following table shows as far as possible the influence of age on the sickness, mortality, and invaliding among the troops in the Command during the year :—

Age.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years - -	1,168	1,644	13	17	1407·5	11·13	14·55
From 20 to 24 years -	20,532	40,252	492	526	1960·5	23·96	25·62
" 25 " 29 " -	15,545	20,995	246	302	1350·6	15·83	19·43
" 30 " 34 " -	3,429	2,807	48	82	818·6	14·00	23·91
" 35 " 39 " -	918	664	19	19	723·3	20·70	20·70
40 years and upwards -	235	178	10	7	757·4	42·55	29·79
Not stated - - -	334	37	—	—	—	—	—
Total - -	42,161	66,577	828	953	1579·1	19·64	22·60

The ratio of admissions was as usual highest among men between 20 and 25 years of age, the next being that of men under 20 years, followed by that of men between 25 and 30, declining in the subsequent quinquennial periods down to men of 40 years of age and over, when there was a slight rise. All the periods show increased ratios as compared with those of the preceding year, those of the two first being greater by 218·0 per 1,000 each, and the third by 129·8.

There was but little variation in the sequence of the ratios of mortality from that of the previous year, the highest, as in previous years, having occurred in men of over 40 years of age, among whom there were 10 deaths, in a small average strength, and the lowest in men under 20 years of age, differing in this from the preceding year, when the lowest occurred in the 30·35 quinquennial period. With the exception of the ratio of men under 20 years, which shows a small decrease of ·72 per 1,000, all the ratios are greater than in 1891, that of men between 35 and 40 years by 6·28, that of men over 40 years by 5·96, and that of men between 20 and 25 years by 3·59.

It may be of interest to note here that 9 of the 13 deaths in men under 20 years of age, and 213 of the 492 deaths among men of from 20 to 25 years were due to enteric fever, while only 44 of the 246 and 4 of the 48 in the two following quinquennial periods respectively were owing to that disease.

Bengal.

Subjoined is a table showing as far as possible the influence of length of service in the country on the sickness, mortality, and invaliding among the troops in the Command in the year 1892:—

Length of Service in the Country.	Average Strength.	Admissions.	Deaths.	Invalided.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year - -	8,218	12,500	185	119	1521·1	22·51	14·48
From 1 to 2 years -	6,951	14,184	178	228	2040·6	25·61	32·80
" 2 " 3 " -	7,091	12,590	134	143	1775·5	18·90	20·17
" 3 " 4 " -	5,889	8,848	110	140	1502·5	18·68	23·77
" 4 " 5 " -	5,794	7,601	54	105	1311·9	9·32	18·12
" 5 " 10 " -	6,807	9,917	135	192	1456·9	19·83	28·21
10 years and upwards -	1,077	900	26	26	835·7	24·14	24·14
Not stated - -	334	37	6	—	—	—	—
Total - -	42,161	66,577	828	953	1579·1	19·64	22·60

It appears from the foregoing that men in their second year of Indian service had the highest admission rate, followed with considerable intervals between by those in their third year and by those in their first year of service; differing in this respect from the preceding year in that the first, second, and third year men then followed in sequence; the order of the subsequent periods are alike in the two years. Comparing the admission ratios of the two years, it is found that there was an increase in all the ratios except in that of men in their first year of service, which shows a decline of 166·6 per 1,000. The most notable increases were 462·8 in the ratio of men from one to two years' service, 246·6 in that of men in their third year of service, and 179·7 in that of men in their fourth year of service.

As regards mortality, the order of sequence differs considerably from that of the preceding year, the highest ratio being now found in men in their second year of service, the next in those of 10 years' service and over, followed by the first year men, then those between 5 and 10 years' service, and men in their third, fourth, and fifth year of service respectively in order. Compared with the corresponding ratios of 1891, there was a decline of 5·37 in the death rate of men under one year's service and one of 1·50 in that of men of 4 to 5 years' service; while all the others are higher, that of men of 10 years' service and over and of men in their fourth year of service being nearly double the preceding year's ratio. The ratio of men in their third and in their second year of service were higher by 4·06 and 3·94 per 1,000 respectively.

Of the 185 deaths recorded of men under a year's service in the country no fewer than 103 were due to enteric fever; of the 178 deaths among men under two years' service 79; of the 134 deaths under the next period 44; and of those recorded under the three succeeding periods 21, 8, and 14 deaths respectively were from that disease. There were no deaths from enteric fever in men of 10 years' service and over.

In Abstract XV. will be found a table showing the admissions into hospital, deaths, invaliding, &c., according to the different groups and orders of disease; and in Abstract XVI. the sickness and mortality from the various orders of diseases in each of the military districts of the Command.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—The number of admissions for *eruptive fevers* was 81; of these 8 were cases of small-pox, equal to a ratio of ·2 against ·3 in the previous year, and 1·0 per 1,000 the average ratio of the preceding six years. There were no deaths from small-pox in the present year against one death, or a ratio of ·02 in 1891 and ·09 the average ratio of the preceding 6 years. 2 of the 8 cases occurred at

Bengal.

Muttra, and one each at Shahjehanpur, Saugor, Multan, Amritsar, Rawalpindi, and Peshawar. The remaining admissions comprised 33 of epidemic rose rash, 21 of dengue, 11 of measles, 6 of chicken-pox, and 2 of scarlet fever.

The first case of small-pox at Muttra, an isolated one, of the confluent form, was followed by a mild attack of the disease in the special orderly; both recovered and both bore marks of vaccination; the other cases call for no special remarks.

Enteric Fever caused 1,130 admissions into hospital and 270 deaths, with an average constantly sick of 175·13, being in the ratios of 26·8, 6·40, and 4·15 per 1,000 respectively. The admission and the constantly sick rates were higher by 2·0 and ·21 per 1,000 respectively than those of the preceding year, but the death rate was lower by ·27; while as compared with the corresponding average ratios of the preceding six years they were all greater, viz., by 5·9 for admissions, ·82 for deaths, and 1·22 for constantly sick. The per-centage of mortality to attack was 23·9 against 26·8 in the preceding year and 26·8 the sexennial average. In Abstract XVIII. will be found a table showing the occurrence of enteric fever at each station and in each quarter of the year. As in the preceding year, the greatest number of cases and deaths took place in the second quarter, next in the third and fourth quarters, and the least in the first; but in the present instance the highest per-centage of mortality to attack, 30·0, occurred in the first quarter, the next, 28·1, in the second, followed by 21·6 in the fourth, the lowest having been 18·3 in the third quarter. In 1891 the highest per-centage happened in the second, the next in order being the third and fourth quarters, the first having had the lowest.

The disease occurred, to some extent, in every district in the Command, and also in every station excepting seven, viz., Gnathong, Fort Allahabad, Landour, Fort Lahore, Fort Attock, Bara Gali, and Thobba. The highest ratio of admissions was 51·1 in the Sirhind district, this being more than three times its ratio of the previous year. The next was 46·8 in the Narbudda district, or more than 3½ times its ratio in 1891; the third highest being 38·5 in Rohilkhand district, an increase of 9·4; Quetta district had a ratio of 30·8. The lowest admission rate, as for several years past, again occurs in the Presidency district; this was 5·1, a fall of 4·3 per 1,000 from the previous year's ratio; and the next above was 11·5 in the Peshawar district, against 37·6 in 1891. Of the other districts Oudh shows a notable decline of 13·5, and Rawalpindi one of 9·7 from the previous year's ratios.

The highest mortality ratio was 9·95 per 1,000 in the Rohilkhand district, exceeding its previous year's ratio by 3·19. This is closely followed by 9·64 in the Bundelkhand district, and 9·03 in the Narbudda district, the former being nearly four times the previous year's ratio, and the latter a fractional decrease of ·43. The death-rate of Sirhind district was 8·64 against 4·83 in 1891, and that of Rawal Pindi district 7·19, being a decline of 2·17. The lowest ratio of mortality also is shown by the Presidency district, this was 1·44 per 1,000, and less than a third of its death-rate in 1891; followed by the Allahabad district with 3·35, a fractional decrease of ·74. The Quetta district had a ratio of 3·62, or nearly double its death-rate in the preceding year when it stood lowest in this respect. Of the other districts Peshawar, which had the highest mortality ratio the year before, 11·98, has this year the notably low one of 5·40; Meerut, with 6·29, shows a fall of 2·94; and Rawalpindi, with 7·19, a decline of 2·17 from the previous year's ratios.

The station at which the greatest number of cases occurrred was Dagshai, where there were 98, including 3 transferred from the line of march, with 12 deaths, as compared with 11 and 1 death during the previous year. Of these 98, 3 occurred in March, 12 in April, 13 in May, 18 in June, 21 in July, 16 in August, 7 in September, and 7 in October. 95 of the men belonged to the Argyll and Sutherland Highlanders, a regiment just arrived from England, and whose history after arrival is as follows :—

The regiment landed at Karachi on the 25th of December 1891, went by train to Umballa, arriving there on the 2nd January 1892, and being placed at once under canvas.

On February 25th a draft of 330 men from the 1st Battalion at Hong Kong joined the regiment, which then contained 106 men under 20 years of age, and 831 between 20 and 24, out of a total strength of 1,046. During their stay at Umballa there were 8 cases of enteric fever among the men, and a lady who came out with the regiment also contracted the disease. On the 17th March, the march to Dagshai was commenced, and was completed on the 23rd of that month. One man was sent into the station hospital from the line of march on the 21st, and two were admitted on the day of arrival. There were not at this time, and had not been for several months, any cases of enteric fever among the garrison at Dagshai, therefore it is evident that the disease was brought into the station by this regiment, and the medical officer is of opinion that the first 12 cases were contracted either at Umballa or on the march. For a considerable period cases of enteric fever have occurred annually at Dagshai, and the following table shows the numbers during the past 8 years :— *Bengal.*

Year.	Regiment.	Number of Cases.		
		Officers.	Men.	Deaths.
1885	Highland Light Infantry (from England) . .	—	10	3
1886	„ „ „ . .	2	47	11
1887	„ „ „ . .	—	8	2
1888	Royal Scots (from Burmah)	—	2	1
1889	„ „	—	12	2
1890	West Yorkshire (from Mian Mir) . . .	—	8	1
1891	„ „ . . .	—	11	1
1892	Argyll and Sutherland Highlanders (from England)	—	86	12

The Medical Officer remarks that the Highland Light Infantry were in 1886 like the Argyll and Sutherland Highlanders, a regiment composed of young men under two years' service in the country, and had in that year got a draft of 142 recruits, of whom 4 died, and this, he thinks, shows very plainly the liability of young soldiers lately out from home to contract the disease. This is further exemplified by the fact that out of the draft from Hong Kong there were only 17 cases and one death, a much less proportion than in the rest of the regiment. The Medical Officer remarks that only such cases as presented unmistakable symptoms of enteric fever were returned under that heading. It was, however, quite impossible to say whether some of the prolonged cases, of which there were 96, diagnosed as simple continued fever were not really mild attacks of enteric fever.

Two of those returned as enteric fever were among patients in hospital, and 5 among orderlies attending on their comrades. A sweeper who removed the excreta from the wards died of what was diagnosed as enteric fever, but permission to make a post-mortem examination for the purpose of verifying this diagnosis could not be obtained. The cause of the disease could not be traced to any insanitary condition. Samples of the water supply were twice subjected to analysis by the chemical examiner, Lahore, and he on both occasions reported the water to be of good quality; the milk supply was changed without effect, the "filth pits" were removed to a greater distance from the barracks, there was not any case among the prisoners, acclimatised men, the prison being the nearest building to these pits, and cases came from the side of the hill on which these pits were not situated, and the aërated waters were manufactured at the officers' mess and also at a shop on the officers' hill, where there were not many cases. Regarding the probable cause the medical

Bengal.

officer writes :—"The facts in favour of its being due to some insanitary "condition on the hill or infection are the following :—

"1. There was not any enteric fever on the hill till the arrival of the "Argyll and Sutherland Highlanders.
"2. There was not a case among the young officers who lived on a different "spur.
"3. There were 17 cases among the Hong Kong draft, and these men "having been one or two years at that station should have been "acclimatised.

In favour of its being climatic he writes further :—
"1. They were all young soldiers or men lately arrived in the country.
"2. The men themselves mostly attributed the cause to exposure to the "sun, chills due to wettings, &c.
"3. The cases did not come from any particular barrack, they came from "nearly every building occupied by men.
"4. Some of the cases commenced with simple continued fever or ague, "others with remittent fever, and some had well-marked attacks of "ague during convalescence. This was in young men who had not "any previous malarial history, and who had been only a few months "in the country.
"5. The greatest number of cases was in July."

The conclusions he arrived at were that the disease was brought by the regiment to Dagshai and spread among the young soldiers, and that exposure to the sun, wettings, chills, &c., were exciting causes giving rise to fever, and thus pre-disposing the men to enteric fever when that disease was present. He further remarks that men in the early stage, when suffering from diarrhœa before admission to hospital, used the latrine nearest to them at the time, and thus probably spread the disease from one building to another.

He also considers that the poison is present in the soil at Dagshai, the whole hill being saturated with sewage, and says that the large number of cases of enteric fever, sore throat, and erysipelas occurring about the same time point to some local cause, which he believes to be miasmatic in character, the germs of the disease rising out of the ground.

At Rawalpindi 93 cases were treated with 24 deaths, as compared with 65 and 13 in 1890, and 116 and 31 in 1891. Of these 93, 74 were admitted in the station and 19 were transfers from other hospitals, 17 being from the Isazai expedition in October and November, causing the highest numbers to be in those months instead of in May, June, and July as in the previous year. Recent arrival in the country was considered the chief predisposing cause.

The cases at Lucknow were 78 with 17 deaths, those in 1891 having been 126–20, and in 1890 76–15. During the rainy season the prevalence of the disease diminished as usual.

The medical officer remarks :—"The returns show a repetition of the oft-"told tale of the susceptibility to the disease of the younger men and those "who have arrived in the country within one or two years."

Of the cases 13 were in men of less than 6 months' service in India, 24 between 6 and 12 months, and 19 between 1 and 2 years. The medical officer also remarks :—"I stated last year that I am inclined to the fæcal dust "theory; while I am unable to adduce further evidence for that theory, I do "not think there is any against it."

At Sialkot there were 69 cases, of which 13 proved fatal, as compared with 46 cases and 8 deaths in 1891 and 81 with 15 deaths in 1890.

The medical officer is of opinion that the prevalence or non-prevalence of the disease is in accordance with the relationship of underground water to surface and subsoil pollution, the nearer the water-bearing strata to the surface the greater the danger during drought of the germs of disease being liberated by loosening of the soil or being carried by precolation to the well water, and therefore that the disease may be either air-borne or water-borne. He predicted that as in the early part of this year the climatic conditions were extremely favourable, unless a long drought followed the year should be a healthy one. Though there has not been the long drought usually experienced in the early summer months, there has been a considerable number of cases of enteric fever at this station. **Bengal.**

There were at Quetta 68 cases, 8 fatal, as compared with 21 and 4 in 1891 and 45 and 5 in 1890.

The medical officer writes:—"The atmosphere at this station is very dry, "and desiccating dust storms from the west are very prevalent. The filth "pits and refuse ground are situated west of cantonments, particles of dried "refuse are carried by the wind across the lines, and have every opportunity "of obtaining entrance into the throats and food of the inhabitants, becoming "a probable source of disease." He has recommended that all refuse should be destroyed by incineration.

At Chakrata the cases numbered 49 and the deaths 11. The numbers in 1891 were 23 and 6, and in 1890 44 and 13. These 49 cases included 4 transfers from the line of march; 40 of the men had arrived in the country during the previous trooping season, *i.e.*, 1891–92. The average age of the 49 men was 22. In 15 instances the disease was clearly imported, contracted on the line of March or at Meerut. In 12 it was contracted at Chakrata, and in 18 at Kailana.

In 5 of those contracted locally there was a fair reason for presuming that drinking the water found down the khuds or along the roadside was the cause.

The medical officer considers that youth was the cause of the greater preponderance of cases at Kailana over Chakrata, and does not think that the water supply at the former, though open to suspicion, could be blamed for the cases which occurred during and after the rains, because as soon as it was found that men were admitted from Kailana and not from Chakrata (nearly all the cases at this period were from the former place) he arranged for a supply of drinking water for Kailana from Chakrata. This was commenced at the beginning of September. Of the 30 cases not imported 1 occurred in April, 2 in May, 5 in June, 3 in July, 4 in August, 7 in September, and 8 in October. As with one exception all the cases in the three latter months came from Kailana, and looking at the fact that even those which occurred in October might have contracted the disease before the water supply was changed, it seems probable that the water supply at Kailana was the cause of these cases. It must be borne in mind that though good water was brought to the men that did not preclude them from drinking from other sources. These cases occurring during the rains make it appear probable that the water supply was contaminated by washings of the hill sides flowing into it.

At Jhansi there were 50 cases, including 4 transfers from the line of march and 14 deaths. The numbers in 1890 and 1891 were 33 and 9 and 13 and 2 respectively.

One or more cases were admitted in every month of the year, but mostly in the last 5, viz., in August 10, September 6, October 6, November 7, and December 6. The medical officer assigned impure water as the cause. He considers that all the wells in Jhansi are impregnated with the bacilli of enteric fever.

Bareilly accounted for 50 cases with 19 deaths, as compared with 98 and 25 in 1890 and 56 and 11 in 1891. The medical officer had only recently taken over charge, and was not able to give any information about these cases as regards cause, &c.

There were 42 cases and 9 deaths at Umballa, at which station in 1890 there were 27 with 8 deaths, and in 1891 26 with 10 deaths. All the cases last year were in men in their first year of service in the country. The medical officer writes:—"I am of opinion that the origin of enteric fever in India is defective "subsoil drainage. The periodic heavy rains wash down the accumulated "surface filth and sewage unremoved by drainage into the subsoil, where, "being unable to escape, it ferments, and under a scorching sun gives out "emanations destructive to health, and affords the requisite filth element for "the propagation and dissemination of the pythogenic fever of Murchison."

At Subathu, where in 1890 34 cases and 8 deaths occurred, and in 1891 only 7 (none fatal), 41 cases were met with, 5 of which proved fatal. The medical officer remarks:—"The increased prevalence of the disease can only be "attributed to the soil, from which the poison had to work on a regiment new "to the country, and comprising a large number of recruits fresh from "England. The disease could in no instance be traced to water, milk, or

Bengal.

" food supplies, and the emanations of organisms from the ground is doubt-
" less the most probable theory as to its origin. With a large native
" population in the immediate neighbourhood of the barracks pollution of the
" surface soil must occur, and that enteric fever is not uncommon amongst
" native children is, I believe, admitted. With one exception, in which the
" patient must have brought the poison with him from Umballa, the disease
" was contracted in the station. It was fairly distributed over the different
" barracks, but men living and sleeping upstairs seem to have been somewhat
" less liable to the fever than those occupying the ground floor. April gave 2
" cases, May 2, June 4, July 7, August 10, September 11, and October 3."
This is another instance of a hill station in which a large proportion of the cases occurred during the rainy season, and it points to the probable pollution of the water supply by washing of the hill sides during heavy rain.

There were 41 cases with 11 deaths at Meerut, the numbers in 1890 and 1891 being 64 and 20 and 61 and 16 respectively.

The medical officer writes:—"The cause of enteric fever is as obscure as ever."

He is inclined to think that a fever of a prolonged nature, having as its pathognomonic sign ulceration of the small intestines, can be caused without specific excitant; in fact, that youth, indiscretion, indigestible food, undue exposure to heat, and fatigue are factors enough in themselves to produce a fever, the nature of which is such that over 25 per cent. of those attacked die. He considers that if the five causes above mentioned were eliminated, with them would go nearly all the cases of the disease we call enteric fever.

At Shahjahanpur there were many more cases than during the two previous years the numbers being, in 1890, 6 cases, 1 death; in 1891, 5 cases, 1 death; and in 1892, 37 cases and 2 deaths. Of these 21 were in men with less than 2 months' service in the country, they belonged to the Essex Regiment just arrived from England, and many of them probably contracted the disease before arrival at the station, *i.e.*, on their journey from Bombay.

There were 35 cases and 4 deaths at Jubbulpore as compared with 15 cases, 3 fatal in 1890, and 13 cases, 11 fatal in 1891.

The Medical Officer reports that the cases were of a milder type than the previous year's, and that they were all presumably contracted in the station itself from some undiscovered cause not connected with insanitary conditions in or around the barracks.

At Allahabad the number of cases in each of the last 3 years has been very nearly the same, viz., 25 cases, 10 fatal in 1890; 22–4 in 1891; and 22–4 in 1892. None of the cases last year were met with in men recently arrived in the country.

The number of cases at Multan compared unfavourably with the two preceding years, in each of which there were 8 cases, one only being fatal in 1890 and 3 in 1891, whereas in 1892 there were 21 with 6 deaths. The Medical Officer states that the disease could not be traced to any special insanitary condition, but that doubtless the men had many opportunities of contracting it in the neighbouring bazaars and in the native city. He, however, thinks that the most probable cause is the emanations of micro-organisms from the soil, which would be increased by the unusual quantity of rain which fell during the year. As one of the cases occurred in February, 5 in April and 13 in May, *i.e.*, before the rainy season, and only two subsequently, viz., 1 in November and 1 in December, the facts do not support the theory enunciated. One case was said to have been contracted on the march from Mian Mir.

At Cawnpore in 1890 there were 16 cases, 11 fatal, in 1891, 17, 6 fatal, and in 1892, 23 (including 3 transfers from the Royal Artillery practice camp a few miles from the station) with 7 deaths. 6 of the cases were in men with under 6 months' service in the country.

At Ranikhet there were 19 cases with 5 deaths as compared with 17 cases, 5 fatal in the preceding year and 51, with 13 deaths in 1890. The Medical Officer reports that of the 19 cases only 6 were contracted in Ranikhet. Of the others 6 appear to have been imported from Camp Ganesh Ghat, Rampore State, and 7 had probably contracted the disease during the march up from the plains.

There were 18 cases with 9 death Peshawar as compared with 4 cases, 1 fatal, in 1890, and 28 cases with 11 deaths in 1891. Of the 18 cases, 8 appeared in the month of May.

At Dalhousie 18 cases are recorded, of which 6 proved fatal. In 1890 there were 9 with one death, and in 1891, 20 with 12 deaths. 6 of the 18 cases were admitted within three weeks after arrival of the men at the station, and the disease was probably contracted on the line of march from the plains. One of these men had been seen by the Medical Officer drinking water from a dirty puddle on the road side. Two other cases possibly originated on the march. Two men who were nursing orderlies on cases of enteric fever contracted the disease and both died. Typical ulcers were found in their intestines.

The record of enteric fever at Agra for the past 3 years is as follows: 1890, 45 cases, 16 fatal; 1891, 23, one fatal; and 1892, 18 with 7 deaths.

The Medical Officer remarks:—"As usual the men attacked were all young men and most of them had been only a short time in India." Again, "The cause "of the disease could not be traced, but may have been due to the drinking "of contaminated water in the surrounding villages."

At Pachmarhi, where there were not any cases in 1890 and only two in 1891, there were 17 with 7 deaths. 9 came from No. 4 barrack, the filter of which was found to have become unaccountably foul during the month of August; 7 occurred in that month, 1 in June, and 1 in September. This barrack, however, accommodated more men than the others, without any overcrowding. It had an advantage as regards site, standing on higher ground and being further away from the lake. No barrack was exempt, even the quarters for married men supplied one case. 10 of the men were only 20 years of age and of the fatal cases 6 were men with less than one year's service in India. The Medical Officer finds fault with the wells, which are sunk within 100 feet of a stream that runs past cantonments. In the dry season the well water shows good results on analysis, but during the rains much organic matter (vegetable) is found to be present in it.

He brings to notice the fact that three cases occurred in men who were admitted for venereal disease and in whom the fever developed soon after admission into hospital. He, therefore, suspects their attacks were due to drinking impure water when visiting the residences of native women. He ascertained that the water used by these natives was taken direct from the lake, without any filtration. In many of the reports it is noticed that some of the cases of enteric fever were in men who had been admitted for venereal disease, and in whom the first symptoms of fever had appeared within the time recognised as the period of incubation. This fact points very strongly to the probability of the disease being very often contracted in the bazaars, native cities, villages, &c., and not through water drunk in the barracks.

At Benares there were 17 cases with 3 deaths as compared with 8-4 in 1890 and 9–3 in 1891. Of these 17, 4 were transfers from the line of march.

The Medical Officer writes:—"In some of the cases the source of infection "was probably in the native quarters outside cantonments, this was most "marked in two men who were admitted for gonorrhœa and within a few "days showed symptoms of enteric fever."

At no other station did the number of cases exceed 15.

The following extracts from the reports of some of these stations give all the information necessary about them:—

Dum Dum.—3 of the 5 cases were in men who had just come from England and who were admitted within 20 days after there arrival at the station, they had probably contracted the disease during their journey across India.

Barrackpore.—Of the 5 cases 2 were in young soldiers just arrived from England, they were admitted within a month of their arrival in the station. Two other cases were probably contracted in the gun practice camp.

Dinapore.—9 cases, three of which occurred in young soldiers within six weeks of their arrival in India.

Fatehgarh.—One of the two cases admitted was that of a man who was acting as attendant on the two cases transferred from the line of march.

Fyzabad.—7 of the 11 cases were in men just arrived by march from Lucknow where they had been at a camp of instruction. It is doubtful whether the disease was contracted at Lucknow or on the march. One other

Bengal.

case was contracted on the march from Kailana. There was only one case in a man over 22 years of age.

Moradabad.—There were 5 cases transferred from Camp Ganesh Ghat. Also 11 of simple continued fever, which the Medical Officer is of opinion were all, or nearly all, mild cases of enteric fever.

Roorkee.—5 cases were transferred from Camp Pur and believed to have been contracted on the march from Kailana.

Jutogh.—Of the 9 cases three were contracted before arrival at the station, either at the station they came from or on the march up. Drinking impure water in the villages down the hillsides was suspected to be the cause of the other cases.

Jullundur.—One case occurred in a man who was nursing an officer ill in hospital with the disease.

Ferozepore.—The Medical Officer writes, "There is not any insanitary " condition inside the barracks or in their vicinity, but outside on every side " the foulest dirt prevails in the city and villages, quite adequate to account " for sickness if the germ of enteric fever is present."

Bhagsu.—Of the 7 cases 5 were in men with only 4 months' service in the country. They arrived from the plains on the 8th of April. The first case was admitted on the 18th of that month, and was supposed to have been contracted on the line of march. The second case was admitted on the 29th of April, and the remainder between that date and the 12th of May. Impure milk from a village down the valley was suspected to be the cause; the source of supply was changed and no more cases occurred.

Four cases of remittent fever were also recorded as admitted between the 4th and 11th of May, and were ascribed to heavy rain which fell at that time. They, like the cases of enteric fever, were all in young men only 4 months in the country. They are said to have presented quite different symptoms to the cases returned as enteric fever, but the temperature charts sent with the report certainly do not differ, and taking into consideration that they occurred at just the same time as the cases of enteric fever, it seems very probable they also were cases of that disease. That there was not any error of diagnosis in the cases returned as enteric fever was proved by the two fatal cases presenting typical lesions at the post-mortem examinations.

Kuldana.—8 of the 12 cases were admitted within 21 days after their arrival from the plains, and were, therefore, probably contracted at Rawal Pindi, or on the march up.

Simple Continued Fever.—There were 2,278 admissions into hospital from this disease, with one death, and the average number constantly sick was 88·18, the ratios per 1,000 of strength being 54·0, ·02, and 2·09 respectively, and therefore higher than the corresponding ones of the preceding year by 13·3, ·02, and ·40 per 1,000 severally. Compared with the average ratios of the preceding six years, however, there was a decline in all three, viz., of 17·4 in the admission ratio, of ·02 in that of mortality, and of ·44 in the constantly sick rate.

The exceptionally high admission rate of 173·9 is shown by the Bundelkhand District, against 8·4 per 1,000 in the preceding year. Of 433 admissions in the district 391 occurred at Agra alone, the medical officer of which states that "the fever was severe, but in few cases lasted more than a week, " and the patients recovered quickly from its effects, there was no eruption " or any specific symptom, and it could not be classed under any other head, " but it began and ended very much like an epidemic, which lasted as it were " through July, August, September, and part of October, and was at its height " during the two first weeks of September." The next highest ratio was 74·0 in the Rohilkhand district, exceeding that of the previous year by 32·1; the third being 64·4 in the Oudh district, also a large increase of 30·2. This is followed by 63·5 in the Lahore district, an increase of 27·3. No cases of this disease are recorded in the Quetta district, and the low ratios of 5·1 and of 6·7 are shown by the Presidency and Peshawar districts respectively, the former being a decrease of 4·7 and the latter one of 5·5 as compared with 1891. The Meerut district with a ratio of 56·4 shows a decline of 35·9 per 1,000. The only death recorded occurred at Gharial in the Murree Hills.

Bengal.

Cholera.—For this disease there were 134 admissions and 95 deaths, being in the ratios of 3·2 and 2·25 lower than the ratios of 1891 by 1·0 and ·56, but greater than the sexennial average by ·8 and ·65 per 1,000 respectively. The stations at which cholera occurred in each of the four quarters of the year are shown in Abstract XIX., from which it appears that 62 cases, 44 fatal, happened in the third, 51 with 37 deaths in the second, 20 and 13 deaths in the fourth, and one, a fatal case, in the 1st quarter. The cases were distributed over 22 stations, the most important of which in this connexion are dealt with below.

The station at which the greatest number of cases occurred was Ferozepore, 27, with 18 deaths. The disease first appeared in the city on the 9th of April, and continued prevalent there for months, and also in the villages surrounding cantonments. In the latter there were three distinct outbreaks, in April, June, and August. The first case appeared in a grass-cutter of the native cavalry regiment, and it was ascertained that the man had visited a village in which cholera existed. The next case occurred in a sowar of the same regiment in which other cases were met with. On the afternoon of the 21st of April a man of the Royal Sussex Regiment was admitted into the detention ward of the station hospital suffering from diarrhœa and slight vomiting. The following morning he appeared so much better that he was moved into one of the ordinary wards, where during the day his attack developed into cholera and proved fatal. On his way to this ward he had been placed (in a dhooly) for a few minutes in another ward while a bed was being prepared for him. Two hours subsequently a patient in this other ward was attacked, as were also five other inmates, and two more were seized in the ward in which the first man had been finally placed. All these cases occurred on the 22nd. Next day two more patients in the hospital were attacked, and a third on the 24th. On the 25th a patient in a tent in the hospital compound was taken ill, and on the 26th there were 3 cases, 1st a nursing orderly, then a patient in a tent, and afterwards a second nursing orderly. The last case of this outbreak occurred on the 28th in a patient in a tent. The Medical Officer records his opinion that as only two hours elapsed between the placing, for a few minutes, of the first case in a ward, and the commencement of the outbreak in that ward, direct infection could not be ascribed as the cause of the patients in hospital being attacked. The second outbreak commenced on the 19th of June, on which day three men of the Royal Artillery in the Fort were attacked in their barrack. They were treated in the detention room in the Fort, the only available place, which is an end room of the building occupied by married soldiers and their families. The next day a woman living in the adjoining quarter—under the roof there is communication between the rooms—was attacked, and on the same day a case occurred in the tents into which the men of the Royal Artillery had been moved the previous afternoon. On the 21st two more of these men were seized, and on the 22nd a patient in the station hospital. On the 26th the last cases of this outbreak took place, viz., an officer living in a private bungalow; the wife of a soldier living in the Ordnance lines, and a man of the Sussex Regiment in a tent near the Fort. The third outbreak consisted of only two cases, one in the station hospital on the 16th of August, and the other in the Fort on the 29th of the same month. No insanitary condition could be found to which any of these outbreaks could be ascribed, or any explanation given of the fact that the disease clung round the hospital and fort.

At Mian Mir 26 cases with 17 deaths occurred.

At Peshawar there were 21 with 13 deaths.

At Dinapore cholera broke out in July, and again in October, total cases 8 with 6 deaths.

At Lucknow the cases were 6 with 5 deaths.

At Rawalpindi there were 4 cases, all of which proved fatal.

At Jhansi, where there were 4 cases with 3 deaths, the medical officer reports that they all occurred in April, amongst a body of troops just arrived from England.

At Murree the cases were 4 with 3 deaths.

In Fort Lahore there were 4 cases, all of which terminated fatally.

Bengal.

At Multan 3 men were attacked and two died. The disease had been very prevalent in the city and district before it appeared in cantonments.

At Muttra one fatal case occurred in April and another in July.

At Lower Topa two men were attacked, both fatal cases.

At Gharial a man who had been discharged from the Sialkot military prison on the 18th August was fatally seized on the 22nd of that month, having probably contracted the disease on the road to Murree, along which it was then prevalent. An officer, Army Medical Staff, was attacked on September the 2nd, the same day on which several cases occurred among officers at Murree, where this case, which resulted in death, also most likely originated.

At Roorkee two cases were treated, and both men succumbed, but the disease was not contracted at the station.

At Landour two fatal cases occurred, and there were two cases at Naini Tal with one death.

The remainder of the cases took place, at Delhi, 1, fatal; Agra, 1, fatal; and one each at Chaubattia, Allahabad, Benares, and Shahjahanpur all recoveries. For troops on the march 10 cases with 8 deaths are returned.

Dysentery caused 1,044 admissions into hospital, and 25 deaths, with an average constantly sick of 70·91, or in the ratios of 24·8, ·59 and 1·68 per 1,000 respectively, which are higher than the corresponding ratios of the preceding year by 1·7, ·14, and ·11 severally; but fractionally lower than the average ratios of the preceding six years in the admission and death rates—the constantly sick rate being very slightly greater.

Abstract XX. shows the prevalence of this disease in each military district of the Command, and Abstract XXI. its prevalence in each quarter of the year.

As in the preceding year the highest admission rate, 38·3, was in the Presidency District, but this was less by 12·0 per 1,000 than that year's ratio. The Rohilkhand District follows with 36·5 which was an increase of 11·8. The lowest ratios of admissions were 13·4 and 13·5 in the Rawalpindi and Peshawar Districts, the former being a decline of 4·4 and the latter an increase of 1·9 per 1,000 as compared with 1891. The Sirhind District had a ratio of 30·0 per 1,000 against 16·4, and the Quetta, Bundelkhand, and Lahore Districts show increases of 8·3, 7·7 and, 7·2 per 1,000 respectively; while the ratios of the Oudh and Narbudda Districts were lower by 9·7 and 7·4 than in the preceding year.

The ratio of mortality was highest, 1·35, in the Peshawar District which had no death from this cause the year before, the second being 1·26 in the Allahabad District, which also had no death in the previous year. The Lahore District comes next with ·84, four times the ratio of the preceding year, and the Bundelkhand District fourth with ·80, nearly double the previous year's ratio. There were no deaths in the Rohilkhand, Narbudda and Quetta Districts; and the Oudh and Presidency Districts, which had the second and third highest death rates in 1891, show decreases of ·79 and ·41 per 1,000 respectively.

Taking the four quarters of the year as to the seasonal prevalence of the disease it is found that the sequence of the quarters observed in the preceding two years occurs this year also—the highest admission rate 7·8, being in the fourth quarter, followed by 7·1 in the third, 5·4 in the second and 4·5 in the first. The mortality ratio also was highest, ·24 per 1,000, in the fourth, followed by ·16 in the third quarter; but the ratio of the first quarter ·10 was greater than that of the second, ·09.

Other Diseases of this sub-group included 623 cases of influenza, and 8 of mumps, giving a total of 631 admissions and a ratio of 15·0 per 1,000 with no deaths, against 6·3 and ·02 in the preceding year. The highest rate of prevalence was 70·3 in the Bundelkhand District due to an epidemic of influenza at Agra from the latter end of March lasting into May, the disease having existed previously in the general population and the native troops; in the majority of cases it assumed a mild form, some of the patients were, however, much debilitated, and one death from pneumonia resulted from an attack of influenza. In the Quetta District also which had a ratio of 58·3 (against 16·1 in 1891) epidemic influenza caused 128 admissions at Quetta—the disease having appeared during the early months, died off and reappeared towards autumn; though the majority of the cases were of a mild type, the epidemic, it is stated, had the effect of depressing the standard of health *Bengal.* among the troops. The Peshawar District had a ratio of 43·9, against 5·0 per 1,000 in the preceding year, representing 130 cases of influenza at Peshawar, occurring chiefly in the early months of the year. The disease prevailed to some extent in the other districts also (excepting Rawalpindi).

Malarial Fevers.—These include 19,990 admissions with 8 deaths from ague, 653 admissions and 67 deaths from remittent fever, and 238 cases, 2 fatal, of malarial cachexia, making a total of 20,881 admissions into hospital and 77 deaths, giving an average constantly sick of 681·62 men. The equivalent ratios for these were 495·3, 1·83, and 16·17 per 1,000 respectively—all being greater than the corresponding ones of the previous year by 114·6, 1·26, and 3·83; and higher also than the sexennial average by 126·2, 1·28, and 5·01 severally.

The most notable feature of the present year was the exceptionally high prevalence of malarial fevers in the Peshawar District, the admission ratio for which reached as high as 1152·5 per 1,000 against 410·2 only in the preceding year. This will be referred to again later on. The next high admission rate was 845·6 in the Lahore District which in the previous year had a ratio of 557·1. The third highest was 640·2 in the Bundelkhand District, an increase of 79·0 per 1,000; and the fourth 558·1 in the Quetta District, which was, however, a decline of 188·8 from 1891. The Rohilkhand District had the lowest admission rate, 109·8, a slight fall of 4·5 per 1,000; the next above being the Sirhind District with 213·8, an increase of 43·0 per 1,000, and the Oudh District with 254·6, an increase of 19·6. The ratio of the Meerut District was 473·0 against 299·5; and that of Rawalpindi, 541·4 exceeded its previous year's ratio by 157·4. The Narbudda District shows a decline of 166·0, and the Presidency District one of 153·1.

Of the 77 deaths 56 occurred in the Peshawar District, 5 in the Presidency District, 4 in the Rawalpindi District, 3 each in the Lahore and Meerut Districts, 2 in the Narbudda District, and one each in the Allahabad, Sirhind, and Quetta Districts.

In some stations these fevers were of exceptional severity, being complicated by melæna. This was most noticable at Meerut, Amritsar, Multan, and Peshawar, and was considered due to the excessive rainfall in August. At the last-named station 17 inches—which is more than the average annual amount—fell in 12 days at the end of July and beginning of August, and was followed by a prevalence of malarial fever to an extent which had not occurred in the station for many years.

Septic Diseases caused 167 admissions and 8 deaths, and included 163 cases, 6 fatal, of erysipelas; 2 cases, 1 fatal, of septicæmia; one fatal case of pyæmia, and a case of sloughing phagedæna. The admission rate was 4·0 per 1,000, against 1·3 in the preceding year, and 1·8 the sexennial average, and the mortality rate ·19 against ·12 and ·11 in the two comparisons.

Venereal Diseases.—For *primary syphilis* alone there were 3,858 admissions into hospital, being in the ratio of 91·5, an increase of 5·5 per 1,000 on the preceding year, and a decline of 5·4 from the average ratio of the preceding six years. The average number constantly sick from this cause amounted to 325·65 men, giving a ratio of 7·72, a fractional (·12) advance on 1891, and one of ·02 on the sexennial average. There were in addition 2,773 admissions for simple venereal ulcers, and an average constantly sick of 186·51, making a total of 6,631 admissions, and an average constantly sick of 512·16 men from primary venereal sores, or in the ratio of 157·3 for admissions, and 12·15 for constantly sick. The former was 3·2 per 1,000 greater, but the latter was fractionally (·25) lower than the corresponding ratios of the preceding year. Compared with the average ratios of the preceding six years, both show a decline of 20·2 and ·95 respectively.

For *secondary syphilis* there were 2,324 admissions and 7 deaths, the average number of men constantly sick having been 234·60. The ratio of admissions 55·1 and that of constantly sick 5·56 were 3·5 and ·51 per 1,000 lower respectively than in the previous year, but the mortality rate was ·17 against ·07 in 1891. Compared with the average of the preceding six years, the admission rate as well as that of constantly sick shows an increase of 11·4 and 1·40 respectively.

Bengal.

The number of admissions for *gonorrhœa* amounted to 7,099, giving an average constantly sick of as many as 518·76 men. The admission rate 168·4 was 9·2 higher than that of the preceding year, but it was lower by 2·8 than the six years' average, while the constantly sick rate, 12·30, exceeded the ratios in both comparisons by ·83 and ·37 per 1,000 respectively.

Taking these four forms of venereal affections together, the ratio of admissions is found to amount to 380·8 per 1,000, which exceeds that of the previous year by 8·9, but is less than the six years' average by 11·6. The constantly sick rate which was 30·00 per 1,000, represents a loss to the efficient strength of the force from these diseases of 1265·52 men, against 1203·68 men in 1891; the ratio exceeding that of the previous year by ·06, and the six years' average by ·82 per 1,000.

Regarding *venereal diseases,* a few medical officers made special remarks, some of which were as follows:—

"At Lucknow we have a lamentable increase, which is largely due to the " graver forms, namely, primary and secondary syphilis." . . . "To have 138 " men of the garrison constantly in hospital with a disease that is to a great " extent preventible is a serious matter, and when it is considered that nearly " 30 per 1,000 of these are suffering from the graver forms of the disease, " probably incapacitating them to such an extent that few could be pro- " nounced fit for active service, the evil is accentuated." . . . "Many of these " men will have to be invalided."

At Ranikhet, where there were 518 admissions out of an average strength of 894, the medical officer writes:—

"It is deplorable to think of not only the loss of service to the State from " these preventible diseases, but the deterioration of health and suffering to " the individual diseased. The prostitutes present themselves for treatment " at the cantonment hospital only when they are seriously diseased."

At Chakrata "it is gratifying to note that the admissions for these diseases " gave a smaller ratio per 1,000 of strength than last year and that the last " two years since the establishment of the new cantonment hospitals, contrast " most favourably with the previous two years when there were no such " hospitals."

The admissions per 1,000 of strength during the last 4 years were, 1889, 414; 1890, 326; 1891, 248; 1892, 213.

Hydrophobia.—The only case under Sub-Group V. was a fatal one of hydrophobia at Fatehgarh in July, the man having been bitten in the hand and arm by a strange dog on 31st May when the wounds were washed out and caustic applied. The period of incubation of the disease in this case is said to have been 35 days. In the preceding year there were three fatal cases.

Parasitic Diseases.—These caused 154 admissions, of which 144 were for tænia solium, and 6 for tænia medio-canellata, being in the ratio of 3·7 per 1,000, against 3·2 in the preceding year, and 3·6 the sexennial average. The highest ratios were 7·2 in the Lahore District, and 7·0 in the Rawal Pindi District, against 4·6 and 6·4 respectively in 1891, the third being 4·3 in the Presidency District, against 6·0. The lowest were 1·2 and 1·6 in the Meerut and Narbudda Districts, both of which were fractionally lower than in the year before. The Rohilkhand District had a ratio of 3·0 per 1,000, against ·3, and Allahabad, one of 2·5, against 1·2; while that of Quetta, 3·2, was exactly half that of the previous year.

Scurvy.—There were 11 cases of scurvy, against 5 only the year before; 7 of these were in the Lahore District, 2 in Bundelkhand, and one each in the Allahabad and Rawal Pindi Districts.

Alcoholism caused 194 admissions and 2 deaths; the former including 8 cases of delirium tremens. The admission rate was 4·6 per 1,000, as compared with 8·5 in the preceding year, and 12·5 the six years' average. The two deaths were from alcoholism, one of them having occurred "out of hospital."

Debility, &c.—Under this head (Group C.) are recorded 1,161 admissions and one death, and excepting 4 cases, all were for debility. The rate of prevalence was 27·5 per 1,000, which exceeded that of the previous year by 6·8, and the sexennial average by 5·6. The number of men constantly inefficient from this cause was 77·53, equivalent to a ratio of 1·84, against 1·60 the year before, and 1·48 the average of six years. The highest ratio occurs again in the Presidency District. This was 74·0 per 1,000, and shows the considerable increase of 27·4 on the previous year's admission rate. Of the 205 cases recorded in this district, 161 were returned by Dum Dum alone, due, the medical officer states, to the effects of climate; 27 men, it is further observed, were invalided to England from this cause from the station. The next ratio, 57·6, occurred in the Lahore District; also a large increase of 22·3. Of the 273 cases shown in this district, 207 were furnished by Mian Mir, Dalhousie, and Multan, and attributed to the effects of climate; the death from this cause having occurred at Mian Mir. The Narbudda District comes third with a ratio of 43·5, against 17·2 in 1891, and of 53 cases in this district, 42 are shown by Jubbulpore, against 13 only in the previous year, the medical officer in charge assigning as the cause of this increase, "the greater number of young men in the ranks." The ratio of the Sirhind District, 24·4 per 1,000, was nearly double that of the preceding year, 51 of the 96 cases recorded having occurred at Umballa, the medical officer in charge of which station observes, that "many of the cases were due to constitutional weakness, men " incapable of enduring the hardships of prolonged service in the plains of " India; but the majority could be ascribed to impaired nutrition following " enteric fever or the chronic illness (malarial cachexia), the usual sequelæ of " repeated attacks of ague. The majority of the cases were much benefited " by a short sojourn in the hills during the hot season; but in a minority, " particularly those in whom the health was undermined by malaria, change " to England was found to be essential for complete restoration of health." The Quetta District had the lowest ratio of admissions, 5·4; the next above were Rohilkhand with 11·3, and Peshawar with 11·8. Three districts only had lower ratios than those of the year before, viz., Rohilkhand showing a decrease of 7·3, Quetta one of 3·3, and Bundelkhand of 2·0 per 1,000.

Bengal.

Rheumatism.—1,320 admissions and 4 deaths are recorded, including 96 cases, 3 fatal, of rheumatic fever; and the number constantly sick was 99·86 men. The admission ratio was 31·3, and that of constantly sick 2·37, both about the same as in the previous year, and differing only fractionally from the six years' average. The ratio of mortality, ·09, was nearly double that of 1891, the sexennial average being ·07 per 1,000. The ratio of prevalence was highest in the Quetta district, 48·4, which was nearly three times its previous year's admission rate; next below was 41·2 in the Sirhind district, against 24·4 the year before; the third being 36·4 in the Presidency district, which was highest in 1891, with a ratio of 55·2. The smallest ratio was 21·4 in the Allahabad district, then 22·1 in the Bundelkhand district, and 22·8 in Lahore. Of the others Narbudda had an increase of 9·8, and Peshawar of 9·1, while Rawalpindi shows a decline of 10·3, and Oudh of 7·6.

Tubercular Diseases.—116 admissions and 43 deaths, including those of 12 invalids after leaving the Command, are returned under this head, giving the ratios of 2·8 and 1·02; the former was the same as that of 1891, but the latter ·42 per 1,000 greater. The average of the preceding six years was 3·4 for admissions, and ·84 for mortality. Of the 116 cases, 110 were of lung affection, 2 of diseased larynx, and a case each in which the meninges, lung and intestines, intestines and kidneys respectively, were implicated. Instances of the disease are returned by every district in the Command, the admission ratio being highest, 8·4 per 1,000, in the Bundelkhand district; this was also the case in the preceding year, when the ratio of that district was 5·9 per 1,000, and double that of 1890. The lowest ratio was ·8 per 1,000 in Narbudda, as compared with 2·6. Of the 31 deaths in the Command, 26 were due to lung affection, and one each to tubercle of meninges, larynx, lung and intestines, intestines and kidneys. The deaths of invalids were due to tubercle of lung in 11 cases, and tubercle in 1 case.

Other Diseases.—Group D.—These diseases caused 458 admissions and 7 deaths, including that of an invalid after leaving the Command, being in the ratios of 10·9 and ·17 against 9·7 and ·10 per 1,000 respectively, and 11·1 and ·14 the average ratio of the preceding six years. The cases were chiefly of non-malignant new growths, but there were also 3 cases of malignant disease, and 90 of the admissions were due to anæmia, 22 to scrofula, 4 to purpura, and 2 to diabetes mellitus; while the deaths were from carcinoma 2, diabetes 2 (1 invalid), and sarcoma, scrofula, and anæmia, one respectively.

Bengal.

Local Diseases.—Nervous System.—There were 399 admissions and 23 deaths from diseases of the nervous system, equal to the ratios of 9·4 and ·55 per 1,000, against 9·7 and ·47 per 1,000 respectively in 1891, and 10·8 and ·37 the average ratios of the preceding 6 years. 69 of the admissions were cases of mental disease, being in the ratio of 1·6, which is identical with that of the preceding year, the six years' average being 1·5. Every district in the Command had instances of mental diseases, the Presidency and Bundelkhand districts having had the highest ratio, 3·2 per 1,000, closely followed by 3·1 in the Sirhind district, the next below in order being 2·6, 2·5, and 2·4 per 1,000 respectively in the Oudh, Narbudda and Peshawar districts. The lowest ratios were ·2 in the Meerut, ·3 in the Rawalpindi, ·7 in the Rohilkhand, and ·9 in the Quetta districts.

Excluding cases of mental disease, the highest ratio of admissions for nervous diseases, 13·7, occurred in the Bundelkhand district, an increase of 4·1 per 1,000; the lowest ratio, 4·1, occurred in the Meerut district. The admissions were principally due to neuralgia 168 cases, epilepsy 50, vertigo 44, diseases of the brain, &c. (sub-section 1) 35, and various forms of paralysis 21; the deaths being from congestion, hæmorrhage, inflammation and abscess of the brain 19, apoplexy 2, and hemiplegia and tetanus one each.

Diseases of the Eye.—For these 540 admissions are recorded, and the ratio was 12·8 per 1,000, against 13·7 and 14·1 in the preceding year and the sexennial average respectively. The rate of prevalence was highest in the Sirhind district, which had a ratio of 17·0, an increase of 3·6 on the year before. The ratio was lowest, 9·0 per 1,000, in the Rohilkhand district, lower than the preceding year's ratio by 4·2. Of the 540 admissions, 385 are returned under conjunctivitis, 21 under ulcer of the cornea, 17 under iritis and blepharitis respectively, 15 under hæmatoma of the eyelids, and 13 under keratitis.

Diseases of other Organs of Special Senses.—784 admissions are returned under this head, equal to a ratio of 18·6, against 15·8 in the previous year and 14·6 the average of six years. 27 of the 784 admissions were affections of the nose, the remainder being aural diseases, affecting principally the external meatus, but they included also 34 cases of perforation of the membrane tympani, and 26 of deafness. There was no death in the present year against one in the last.

Diseases of Circulatory System.—These diseases were the cause of 420 admissions and 25 deaths, including that of an invalid after leaving the Command, giving the ratios 10·0 and ·59 per 1,000 respectively. The admission rate was lower than that of the preceding year, as well as the average of six years by 2·8 and 2·4 respectively, but the ratio of mortality, ·57 per 1,000, was greater by ·22 in the two comparisons. The average constantly sick numbered 50·64 men, equal to a ratio of 1·20 against 1·46 in the preceding year, and 1·23 the six years' average. The ratio of admissions was highest in the Lahore district, 13·5 per 1,000. The lowest ratio, 6·6, occurred in the Narbudda district. Mortality was highest in the Sirhind district, 1·27 per 1,000. Palpitation was the principal cause of the admissions, 275 of the 420 cases having been due to that disease, but there were also 66 cases of valvular disease of the heart, and 45 of varix. The deaths were due to valvular disease 12, fatty degeneration of the heart 5, syncope 3, and one each to thrombus, hypertrophy of the muscular substance of the heart, embolism and rupture of the heart. The death of the invalid was due to valvular disease of the heart.

Diseases of the Respiratory System.—These caused 1,684 admissions and 49 deaths, including those of 5 invalids after leaving the Command, being in the ratios of 39·9 and 1·16 per 1,000, which exceed those of the preceding year by 2·0 and ·26, and those of the sexennial average by ·8 and ·10 per 1,000 respectively. 88·29 men were constantly inefficient from these diseases, or in the ratio of 2·09, as compared with 2·15 in the previous year, and 2·29 the average of six years. As in the preceding two years the highest ratio of prevalence in any district was that of Quetta 83·7, a fall of 7·0 per 1,000 from its ratio of 1891. The lowest was 21·0 in Oudh. The most important of the diseases making up the 1,684 admissions were bronchitis, which contributed 1,324 cases, pneumonia 175, pleurisy 66, laryngitis 52, hæmoptysis 21, and pneumonic phthisis 17; the 44 deaths being from pneumonia 34, pneumonic phthisis 4, œdema glottidis and bronchitis 2 each, and passive congestion of lung, and empyema one each. The deaths of the invalids were due to pneumonia 4, and asthma 1. *Bengal.*

Diseases of Digestive System.—These diseases furnished 6,233 admissions and 82 deaths, including 2 of invalids after leaving the Command, the former being in the ratio of 147·8 per 1,000, which exceeded that of 1891 by 15·7, and the six years' average by 4·5, and the latter 1·94, an increase of ·42 and ·21 respectively in the two comparisons. The number of men constantly ill from these diseases amounted to 254·77 men, the equivalent ratio of which 6·04 was higher than that of the preceding year by ·29 and by ·28 per 1,000, than the sexennial average. The ratio of greatest prevalence is shown by the Quetta district, 242·0 per 1,000, higher than the previous year's ratio by 91·5. The Peshawar district exhibits the lowest ratio of admissions 73·2, which is, however, 9 6 per 1,000 greater than in the preceding year.

As usual, the largest number of admissions appears under affections of the mouth and throat, 2,242, followed by diarrhœa 1,509, hepatic disorders 1,007 (including 354 cases of congestion of the liver, 323 of hepatitis, 251 of jaundice, and 67 of abscess), dyspepsia 717, piles 292, and colic 227. The deaths comprised 54 from hepatic abscess, 25 of these having been associated with dysentery, 5 from peritonitis, 4 from diarrhœa, 3 from cirrhosis of the liver, 3 from hepatitis, 2 each from intestinal hæmorrhage, including melæna, enteritis, and stricture of intestines, and one from inflammation of stomach, ulceration of stomach, typhlitis, acute yellow atrophy of the liver, and jaundice respectively. The deaths of the two invalids were due to hepatitis.

In Abstract XX. will be found a table showing the prevalence of, and mortality from, dysentery, diarrhœa, and hepatic diseases in the several districts of the Command; and in Abstract XXI. one showing the prevalence of and mortality from those diseases in each quarter of the year.

Diseases of the Lymphatic and Glandular System.—These caused 1,186 admissions, or in the ratio of 28·1 per 1,000, against 33·0 in the preceding year, and 27·5 the average of the previous six years' rate. There were 5 deaths equal to a ratio of ·12, against ·02 and ·02 per 1,000 respectively in the two comparisons. The number of men constantly inefficient from these causes was 129·68, giving a ratio of 3·08 per 1,000, and being lower than that of 1891 by ·59, but greater than the six years' average by ·38. The admission rate was highest in the Allahabad district, 51·2, which was slightly lower than in the previous year. The lowest was 13·5, in the Peshawar District, a fractional decrease. Of the 1,186 admissions, 1,056 were for inflammation and suppuration of lymph glands, mostly of the groin, and the majority of them due to venereal infection, and 111 for splenic disease; the 5 deaths recorded under this head having been due to hypertrophy of spleen, induration, and enlargement of spleen from ague, splenitis, inflammation of lymph vessels, and lymphadenoma respectively.

Diseases of the Urinary System.—79 admissions and 7 deaths, including that of an invalid after leaving the Command, are returned for these diseases, the equivalent ratios, being 1·9 and ·17 per 1,000, the former lower than the corresponding ones of the preceding year and six years' average by ·2 per 1,000 respectively. There was practically no difference in the death-rate. The highest admission rate was 4·1 per 1,000, in Narbudda, which district was highest also in the previous year, with a ratio of 5·2. The lowest ratio, ·7, occurred in the Peshawar District. The 79 cases included 18 of nephritis, 5 of which were fatal, 18 of inflammation of the bladder, 11 of incontinence of urine, 7 of hæmaturia, 5 of albuminuria, and 3 of granular kidney, one of which terminated fatally. The death of the invalid was due to nephritis.

Diseases of the Generative System.—The number of admissions for diseases of the generative system amounted to 3,423, giving an average of 228·26 men constantly non-effective. The ratio of the former, 81·2, was fractionally lower than that of the preceding year, and 17·3 than the average of the preceding six years, and that of the latter 5·41, fractionally less in both comparisons. As in the previous year, the Narbudda District had the highest admission rate for these diseases, 183·1. The lowest ratio of admissions was 28·0 per 1,000 in the Quetta District, against 60·7 in the previous year. Simple venereal ulcer, which has already been touched upon, contributed as many as 2,773 of the 3,423

Bengal.

admissions for these affections, and of the remaining 650, 338 were cases of orchitis, 126 of inflammation of the glans penis, and 89 of stricture of the urethra. There was no mortality under this head.

Diseases of the Organs of Locomotion.—326 admissions and one death are returned under these diseases, against 342 and no death in 1891. The ratio of admissions, 7·7, was fractionally less than that of the preceding year, but fractionally greater than the six years' average, the death rate, ·02, being below the average. The admission rates of the several districts ranged from 3·6 per 1,000 in Bundelkhand, which was more than double its ratio in the preceding year, to 10·1 per 1,000 in the Presidency. Of the 326 admissions 190 were for synovitis alone, the death having been due to abscess of muscles.

Diseases of the Connective Tissue.—1,048 admissions and one death (from abscess of connective tissue) are recorded for these diseases, being in the ratio of 24·9 and ·02 as compared with 22·8 and ·02 in the preceding year, and 21·5 and ·02 per 1,000 in the sexennial average respectively. The Bundelkhand and Oudh Districts, as in the previous year, lead with 48·6 and 31·9 per 1,000 respectively. The lowest ratio, 14·8, in Narbudda, was less than half that of the year before.

Diseases of the Skin.—These furnished 3,151 admissions, of which 1,400 were for boils, 509 for ulcers, 436 for whitlow and onychia, 217 for eczema, 213 for ringworm and 70 for itch; there were no deaths. The ratio of prevalence was 74·7 per 1,000, an increase of 6·1 on the preceding year's ratio, and one of 6·3 over the six years' average. The number constantly sick from these causes amounted to 132·72, equalling a ratio of 3·15, against 2·68 and 2·75 in the two comparisons. The greatest rate of prevalence for these diseases occurred in the Allahabad district, and was as high as 139·6. The Peshawar district was again lowest in this respect, but its ratio, 40·8, was higher than in the previous year by 4·5.

Poisons.—22 admissions and 3 deaths are recorded against 26 and 3 in 1891; 6 of these (2 fatal) were cases of alcoholic poisoning, one was a fatal case of snake bite, and there were four cases of wounds by stinging insects, 3 of dog-bite, and 2 of poisoned wound by animal venom; one was a case of poisoning by oxalic acid, one by fish, one by meat, one of scorpion sting, one of jackal bite, and a case of poisoned wound by dead animal matter.

Injuries.—Under this head the admission rate was 97·8, against 105·7 in the preceding year, and 115·5 the average of the preceding six years; while the mortality ratio was 2·66 per 1,000, as compared with 2·19 and 2·29 respectively in the two comparisons. There were 185·01 men constantly non-effective from these causes, giving a ratio of 4·39 per 1,000, against 4·58 in the previous year and 4·94 the sexennial average. There were 201 cases of general injuries, with 73 deaths, against 182 and 60 in 1891, the admissions comprising 162 cases of heat apoplexy, 10 of sunstroke, 23 of burns and scalds, 5 of multiple injury, and one of heat stroke; and the deaths being due to heat apoplexy 40, sunstroke 3, asphyxia from drowning 20 (3 suicidal), from strangulation (suicidal) 1, and from plugging of air passages 3, burns and scalds 3, multiple injury 2, and shock 1. Of the cases of heat apoplexy and sunstroke, 17, with 5 deaths, occurred at Mian Mir, 16, 4 fatal, at Multan, 13 and 2 deaths at Sialkot, 10 and 2 deaths at Lucknow and Fort Lahore respectively, 9 and 4 deaths at Ferozepore, 8, 2 fatal, at Nowshera, and 8, with one death, at Peshawar, 7 and 5 deaths at Cawnpore, 7 and one death each at Dinapore and Umballa; 7 cases but no death at Meerut, 6 cases with a death at Allahabad and Benares respectively, 5 and a death at Fort Attock, and 4 with 3 deaths at Rawal Pindi; 4 and 2 deaths at Agra, 4 and a death at Muttra, 3 and a death at Delhi, 2, one fatal, at Campbellpore, and a fatal case each at Fort William, Barrackpore, Sitapur, and marching. There were also cases at eight other stations, varying from 1 to 4. For local injuries the number of admissions amounted to 3,920, and there were 39 deaths. Wounds, contusions, sprains, and abrasions were, as usual, the principal causes of the admissions, having contributed 3,563 of the total number; the most important of the remainder were 194 cases of fractures, 41 of dislocations, 37 of gunshot wounds, 31 of burns and scalds, 23 of strains, and 16 of concussion of the brain. The deaths were made up of 17 from gunshot wounds (14 of which were suicidal and one in which the verdict was an open one of "misadventure"), 11 from fractures, 2 from ruptures, and

Bengal.

one each from dislocation of spine, fracture of base of skull, **with dislocation** of cervical vertebræ, concussion of brain, laceration of brain, simple fracture of spine with compression of cord, compression of cord, contusion of abdomen, with rupture of viscera, fracture of pelvis, with rupture of small intestines and judicial hanging, respectively.

There were 18 cases of suicide, against 13 in the preceding year; 14 of these were from gunshot wounds, all of the head except one from a penetrating wound of the lung, 3 from drowning, and 1 from strangulation. In six only could any motive be assigned for the deed; the death of his master and the receipt of bad news from home were the supposed motives in one; domestic trouble and domestic affliction the presumed motive in two; depression following disciplinary punishment in another; detection of adulterous intercourse in the fifth; and sexual sympathy from the evidence of erotic correspondence with a woman of the garrison in the sixth, and the verdict of the inquest in each case was one of temporary insanity. One of the men was 20 years of age, 2 of 21, 3 of 23, 2 of 24, 2 of 25, 2 of 26, 3 were of 28, 29, and 31 years respectively, 2 of 33, and one of 37 years. Three of the men had 2 years' service, 1 had 3, 2 had 4, 2 were of 5, 2 of 6, and 3 were men of 8 years' service, the others being of 9, 11, 13, 15, and 19 years' service respectively. The cases occurred at Bareilly 3, Umballa and Meerut 2 each, and one each at Cawnpore, Lucknow, Agra, Jhansi, Saugor, Fort Lahore, Sialkot, Rawal Pindi, Peshawar, and Quetta, and troops on the march respectively. There were also 17 cases of self-inflicted injuries, 7 being wounds of the throat, 3 attempts at strangulation, 3 gunshot wounds, 1 sword wound of abdomen, 1 wound from a fork in the region of the heart, 1 wound of the penis, and 1 poisoning from oxalic acid. Of these 5 were placed under observation for mental aberration, in one the deed was committed while a prisoner, two were the result of drink, one was from a desire to escape military service, and one was due to failure to advance in the service; no motive could be ascertained in the remainder.

One hundred and forty-eight surgical operations were performed during the year, of which 126 were primary and 22 secondary, death following in 18 of the former and in two of the latter. Amputation of the thigh at the middle third was performed in a case of thrombosis, but septicæmia supervened and the patient died. There was also a case of amputation at the shoulder joint on account of multiple injury; the patient, however, succumbed. A case of amputation of the thumb (secondary) and one of the fingers for gunshot wounds were successful, as also were three of amputation of the toes, 2 for deformity and 1 for contraction of tendons. Partial excision of ulna was performed in a case of necrosis, which benefitted the patient, who was eventually invalided to England on account of scrofulous diathesis. In a case of abscess of the brain, trephining was resorted to, but the patient died; while ligatures of the axillary artery, third part, in a case of wound of arm and of the palmar arch in a case of wound of hand were carried out with satisfactory results, as were also 7 cases of excision of the eyeball on account of gonorrhœal conjunctivitis (4) and staphyloma, gunshot wound, and wound respectively; extraction of the lens in a case of traumatic cataract; paracentesis of pleura in a case of pleurisy; incision and free drainage in two cases of pleurisy (empyema), and tapping by trocar in one of empyema. Laryngotomy and tracheotomy (secondary) were successfully carried out in a case of sore throat. Abdominal section in a case of stricture of intestines was followed by death; while of 23 cases of hepatic abscess operated on 16 ended fatally. Of these 23 cases 2 (both fatal) were treated by incision, 4 (3 fatal) by incision and drainage, one of the fatal cases having been twice operated on, 4 (3 fatal) by tapping and drainage, 1 by tapping by trocar, 10 (6 fatal) by aspiration, one of the fatal cases having had to be operated on a second time, and 2 (both fatal) by aspiration and incision. Paracentesis abdominis (primary and secondary) in a case of ascites from Bright's disease was carried out with satisfactory results. Among the more important of the other operations which were all successful may be mentioned 5 cases of removal of tumours, one removal of necrosed bone from upper jaw, 3 of removal of glands in inflammation of lymph glands, and one of removal of sequestra by incision in a case of fracture of the pelvis.

Invaliding.—953 men were invalided to England during the year, being in the ratio of 22·60 per 1,000, a decline of 2·50 from the previous year's ratio,

Bengal.

and of 2·16 from the average of the preceding ten years. Taking the invaliding in the different arms of the service, as exhibited in Abstract XLI., the invaliding ratio in the cavalry is found to have been 20·40 per 1,000, giving the notable decrease of 14·05 from that of 1891.

The invaliding ratio in the Artillery, 25·02, was lower than that of the preceding year by 1·14 per 1,000.

The invaliding ratio in the Infantry was 21·31, which is an increase of ·34 per 1,000 on the previous year's ratio.

Tables exhibiting the relation of age and length of service in the country to sickness, mortality, and invaliding, have already been given in the preceding pages, from which it will be seen that the invaliding ratio was, as usual, highest among men of 40 years and upwards, but this was only 29·79 per 1,000 as compared with 52·85 in 1891. Men of 20 to 25 years of age were next highest with 25·62, as in the preceding year, which was, however, a decrease of 2·48 per 1,000, followed, in order, by 23·91 for men of 30 to 35 years of age, an increase of 6·03; by 20·70 for men in the next quinquennial period, a decline of 6·08; and by 19·43 for men of 25 to 30 years also a fall of 4·20; the lowest being, as in the year before, among men under 20 years of age, 14·55, which was higher by 1·72. It will be observed that the sequence of the several groups differed somewhat from that of the preceding year when men of 35 to 40 years, those of 25 to 30 years, and those of 30 to 35 years stood third, fourth, and fifth instead of fourth, fifth and third respectively, as in the present year.

The influence of length of service in the country on invaliding is shown by the highest ratio, 32·80, occurring among men in the second year of service, followed by 28·21 in men of 5 to 10 years' service; in the preceding year these two groups held the reverse order. The third highest ratio was 24·14 per 1,000 for men of 10 years' service and over; the fourth, 23·77 for men between three and four years' service, and the fifth, 20·17, for those in the third year of service; these three groups having in the previous year held the fifth, seventh, and third places respectively. The lowest ratio was among men under one year's service, this was 14·48; the next above being 18·12 among men of 4 to 5 years' service; the former held the sixth and the latter the fourth place the year before. The sequence of the groups in this case, therefore, differed considerably from that of 1891. Comparing the ratios of the two years it is noticed that there was a decrease of 4·62 per 1,000 for men in their first year's service; an increase of 4·05 in the next service period, and a decline of 6·50 in the following one. This is followed by an increase of 6·16 for men in the fourth year, the subsequent groups giving decreases of 7·80 and 4·72 until the men of 10 years' service and over, who show a rise of 2·02.

The principal causes of invaliding were, in order, 134 cases of debility, giving a ratio of 3·18 per 1,000; 111 cases under diseases of the circulatory system, giving a ratio of 2·63 per 1,000, and including 42 cases of palpitation and irregularity of the action of the heart, 41 of valvular disease, 15 of varix, and 5 of hypertrophy of the heart; 86 cases of secondary syphilis, or in the ratio of 2·04; 78 of malarial fevers, or 1·85 per 1,000; 73 for diseases of the digestive system, or 1·73 per 1,000, including 29 cases of hepatitis, 15 of hepatic abscess, 5 of these being associated with dysentery, 5 of congestion of liver, and 6 of diarrhœa; 58 cases, or 1·38 per 1,000 for tubercular diseases; 57, or 1·35 per 1,000 of mental disease; 44 of dysentery, or 1·04 per 1,000; 50 of rheumatism, or 1·19 per 1,000 and 43 of injuries, or 1·02 per 1,000. Compared with the corresponding ratios of the preceding year, and the sexennial average, the only noteworthy fluctuations are an increase of ·31 and ·25 per 1,000 under mental disease, one of ·24 and ·12 under the generative system, and one of ·15 and ·32 respectively under rheumatism; while although there was a decrease of ·55, ·46, and ·25 per 1,000 under secondary syphilis and malarial fevers and debility as compared with 1891, the ratios of those diseases were higher than the six years' average by ·56, ·45, and ·22 respectively. The ratio of invaliding for diseases of the organs of locomotion was lower by ·36 or ·07 in the two comparisons; that for tubercular diseases by ·21 and ·12; that for nervous diseases ·16 and ·20, that for diseases of the lymphatic and glandular systems by ·29 and ·12 per 1,000; that for diseases

Bengal.

of the digestive system by ·14 and ·23, and that for diseases of the urinary system by ·18 and ·07 respectively. The invaliding ratio for enteric fever was less than that of the preceding year by ·19, but higher than the average by ·07 per 1,000.

The number of men finally discharged the service as medically unfit for further service was 517, equal to a ratio of 12·26 per 1,000, which is lower than the corresponding rate in the previous year by 3·04, and than the average rate of the preceding 10 years by 1·03 per 1,000. The principal diseases necessitating invaliding were dysentery 4 cases, or ·09 per 1,000; malarial fevers 22 cases, or ·52 per 1,000; secondary syphilis 35 cases, or ·83 per 1,000; debility 65 cases, or 1·54 per 1,000; rheumatism 7 cases, or ·17 per 1,000; tubercular diseases 39 cases, or ·93 per 1,000; diseases of the nervous system 79 cases, or 1·87 per 1,000, including 51 cases, or 1·21 per 1,000 of mental disease; diseases of the eye 24 cases, or ·57 per 1,000; diseases of other organs of special senses 31 cases, or ·73 per 1,000; diseases of the circulatory system 102 cases, or 2·42 per 1,000; diseases of the digestive system 22 cases, or ·52 per 1,000; diseases of the organs of locomotion 28 cases, or ·66 per 1,000, and injuries 23 cases, or ·55 per 1,000. Compared with corresponding ratios in the preceding year a decrease, ranging from ·64 per 1,000 for diseases of the circulatory system to one of ·05 for diseases of the digestive system, is observed in all the above with the exception of diseases of the eye, and of those of other organs of special senses, in which an increase of ·07 and ·11 per 1,000 respectively is found.

Officers.—The average strength of the officers for the year was 1,194; the number of attacks of illness amounted to 1,266; the number of deaths was 30, and the number invalided to England was 77. The ratio of sickness was, therefore, 1060·3 per 1,000; that of death 25·13, and that of invaliding 64·48, which were all greater than the corresponding ratios of the preceding year by 282·2, 7·27, and 2·41 per 1,000 respectively. There were seven cases of eruptive fevers, of which one was of small-pox at Rawal Pindi (against none in the preceding year), two of measles, two of scarlet fever, and one each of epidemic rose rash and dengue. Enteric fever caused 41 of the cases of illness and 8 deaths, the numbers in the previous year having been 35 and 11 respectively, while 12 officers were invalided to England from this cause against 10 in 1891, and 9 remained under treatment at the end of the year. The ratio of attacks to strength was 34·3 per 1,000 against 29·8 in the previous year, and 26·8, the ratio among the non-commissioned officers and men for the present year; that of the deaths having been 6·70 as compared with 9·35 and 6·40 respectively. The per-centage of mortality to attacks, 19·5, compares very favourably with 31·4 in the previous year, and 23·9 that of the non-commissioned officers and men. The cases occurred at 24 stations against 16 the year before, Lucknow and Quetta having contributed 5, with 1 death each; Meerut and Umballa 3, and a death each; Rawal Pindi 3 cases, no death; Cawnpore, Multan and Sialkot 2 cases each; Muttra, Landour, and on the march a fatal case each; and Darjeeling, Sitapur, Ranikhet, Jubbulpore, Agra, Jhansi, Nowgong, Delhi, Subathu, Mian Mir, Jullundur, Campbellpore, and Cherat, a case each; and there was a death at Fatehgarh in an officer who was under treatment at the end of the preceding year. Other continued fevers caused 115 admissions, and there were 9 cases of cholera, all fatal, against none in 1891. There were 45 cases of dysentery, while influenza caused 50 cases of illness. There was also a case of mumps, and a death from diphtheria. Of malarial fevers there were 344 cases, including 282 of ague, 50 of remittent fever, and 12 of malarial cachexia. There was no death against one in 1891. Venereal affections and debility showed a decline. Six cases are returned under diseases of the circulatory system, including 3 of palpitation of heart; and there was a death from excessive growth of fat in the heart. For diseases of the respiratory system 43 cases and one death (from pneumonia) are recorded against 44 and 2 in 1891; the former comprise bronchitis 35 cases, pneumonia 3, laryngitis and asthma two each, and pleurisy one case. Diseases of the digestive system caused 180 admissions, but there was only one death. Diarrhœa and hepatic affections were, as usual, the chief causes of illness, 53 cases having been due to the former, and 59 to the latter, including 15 cases of jaundice. The death occurred from hepatitis. There were 5 cases under

Bengal.

diseases of the urinary system, two of which were fatal, one from Bright's disease and one from chronic nephritis. Diseases of the organs of locomotion furnished 21 cases, 15 of which were of synovitis. Diseases of the skin caused 52 admissions, boils and ulcers contributing the largest number of cases. The ratio for injuries, 144·9, against 113·1 in 1891, represents 173 cases, chiefly of contusions, sprains, wounds, and dislocations; but they include also 18 cases of fracture, with 3 deaths, 2 from fracture of the base of the skull, and one from fracture of the spine; 9 cases of concussion of the brain, 4 of gun-shot wounds with a death (homicidal) at Ranikhet; a fatal case of compression of the brain; a death in Kashmir from rupture of artery, and a death from drowning in the River Mahanadi.

The invaliding was due to enteric fever 12, dysentery 3, malarial disease 17, venereal affections 3, debility 14, mental disease 3, eye affections 2, hepatic diseases 8, diarrhœa 2, urinary disorders 3, dog bite 2, contusions 2, and simple continued fever, rheumatism, anæmia, bronchitis, obstruction of intestines and abscess of connective tissue, one each.

Women.—The average strength of the women was 1,758, and from among them there were 1,570 admissions and 43 deaths, being in the ratios of 893·1 for the former, and of 24·46 per 1,000 for the latter, both higher than the corresponding ratios of the previous year by 211·2 and 7·05 respectively. Eruptive fevers caused 5 admissions, 3 of these, with a death, were for small-pox against one case, no death, in the year before, and 2 of measles against one in 1891, of the former, two (as also the death) occurred at Rawalpindi and one at Fort Attock. There were 13 admissions and 5 deaths from enteric fever against 17 and 5 in the preceding year; 2 of the cases with one death occurred at Quetta; 2, no death at Ranikhet; a fatal case each at Meerut and Delhi; and a case each, no death, at Lucknow, Naini Tal, Jhansi, Umballa, Dagshai, Multan and Murree; and there were two deaths at Kasauli in cases that remained over from the previous year. Simple continued fever furnished 67 cases. Of cholera there were 10 cases and 7 deaths against 7 and 6 in 1891, Peshawar having contributed 4, with 3 deaths, Ferozepore 2 fatal cases, Shahjahanpur and Agra a fatal case each, and Murree 2 cases, no death. Dysentery gave 16 admissions and 2 deaths; and there were 9 cases of influenza against 4 in 1891. Malarial fevers caused 363 admissions and included 338 cases of and 2 deaths from ague; 17 cases, one fatal, of remittent fever; and 8 cases of malarial cachexia with one death. The cases returned under septic diseases comprised 3 (one fatal) of septicæmia, a fatal case of puerperal pyæmia and 2 cases of erysipelas; in the previous year there were 6 cases also but 3 deaths. There were as many as 452 cases of debility. Rheumatism caused 21 admissions and one death; and for tubercle of the lungs one fatal case is recorded against 2 cases, but no death, the year before; while for anæmia there were 33 cases and one death, as compared with 27 and no death. For diseases of the nervous system 37 cases and one death are returned, 16 being of neuralgia, 12 of hysteria, 2 of paralysis (one of which proved fatal), one of epilepsy, and one of dementia. All the 33 cases of ophthalmic disease were due to conjunctivitis. There were 11 cases with 2 deaths under diseases of the circulatory system as compared with 10 and one death in 1891, palpitation furnishing 4, and varix and valvular disease of the heart 2 each, and the deaths being due to syncope and phlegmasia dolens. 66 cases and 4 deaths are recorded for respiratory diseases and the ratios for these were 37·5 and 2·28 per 1,000 against 20·9 with no death in the preceding year; 55 of the cases were of bronchitis with one death, 6 of pneumonia, 2 of these being fatal, and 2 of pleurisy, one fatal. Diseases of the digestive system caused 212 admissions and 5 deaths as compared with 139 and 6 deaths in the previous year, the ratio of the former being as much as 39·9 in excess. Dyspepsia contributed 59 cases, diarrhœa 52, and hepatic affections 28; the mortality being due respectively to intestinal obstruction, diarrhœa, abscess of the liver associated with dysentery, acute peritonitis and puerperal peritonitis. There were 8 cases and one death under diseases of the lymphatic and glandular system, all but one (including the death) being due to splenic disease. The number of admissions under diseases of the generative system amounted to 148, being in the ratio of 84·2 per 1,000 which was a decline of 4·6 per 1,000; the principal causes were abortion 38 cases, leucorrhœa 14, menorrhagia 12, premature birth

10. The four fatal cases recorded (against the same number in the previous year) were due respectively to uterine hæmorrhage, abortion, premature labour, and sudden death after delivery. There is nothing noteworthy in the cases returned under the remaining heads except a death from heat apoplexy and one of suicide at Jhansi by gunshot wound of head, in which the court of inquest found a verdict of temporary insanity. *Bengal.*

Children.—The average strength of the children was 3,206, the number of admissions from among whom amounted to 1,657, and that of the deaths to 183. The admission rate was therefore 516·8, and that of mortality 57·08, showing the large increase of 111·1 and 12·70 per 1,000 respectively over the corresponding ratios of the preceding year. Eruptive fevers caused 110 admissions and 3 deaths, of which 96 and 2 of the fatal cases were due to measles, 2 with one death to small-pox, 9 to chicken-pox, 2 to epidemic rose rash, and one to cow-pox. The two cases of small-pox occurred at Ferozepore and Fort Attock, and the death at the latter station. There were 40 cases of whooping cough with 3 deaths, against 45 and 3 in the previous year; 2 fatal cases of diphtheria against one in 1891; one of mumps and 7 of influenza. Enteric fever gave 15 admissions and 5 deaths, being 5 admissions and two deaths more than the year before; of these two cases one fatal happened at Subathu; 2 (no death) at Multan; a fatal case each at Sialkot, Campbellpore, Kuldana, and Quetta; and a case each at Allahabad, Fort Allahabad, Bareilly, Naini Tal, Meerut, Kasauli, and Mian Mir respectively. For simple continued fever there were 126 admissions with 3 deaths. There were 8 cases of cholera all fatal, against 7, and 3 deaths in 1891, three of these were at Murree and one each at Benares, Lucknow, Shahjahanpur, Chakrata, and Peshawar. 24 admissions and 2 deaths are returned for dysentery against 45 with 5 deaths the year before. Malarial fevers caused 346 admissions and included 301 cases of ague with 2 deaths, 38 of remittent fever, of which 11 died, and 7 of malarial cachexia, 2 proving fatal.

Erysipelas contributed 2 fatal cases; congenital syphilis, 5 cases, 3 fatal; and hydrophobia, a fatal case. In this latter case which happened at Roorkee, the little boy, about 4½ years old, was brought to hospital complaining of stiffness in the jaws and difficulty in swallowing; the symptoms of hydrophobia rapidly developed, spasm succeeding spasm, and he finally died after 24 hours of great suffering. Neither of his parents knew or even suspected that the child had ever been bitten, and he himself was too incoherent to furnish any information, and no marks were found on his body after a minute and careful inspection. It was known, however, that about a month or 5 weeks previously a mad dog was shot in the vicinity of the married soldiers' quarters; it is probable, therefore, that the child had been bitten and the circumstance forgotten. Parasitic diseases caused 11 admissions against 4 only in the previous year; and under developmental diseases the admissions amounted to 159 cases, 31 being fatal, as compared with 124 and 25 deaths, 21 of the fatal cases being due to debility, 9 to immaturity of birth, and one to obstruction of pulmonic aperture. Of the remaining cases under general diseases, 10 were for tubercular disease with 3 deaths; 6 were for scrofula with one death; a fatal case each under rheumatic fever and rickets, and there were 14 cases of anæmia.

Coming to local diseases it is found that affections of the nervous system caused 58 admissions and 32 deaths against 43 and 29 in the previous year, 45 of the admissions and 28 deaths being recorded for infantile convulsions; 2 fatal cases under eclampsia; 5 cases, one fatal, under inflammation of the cerebral membranes; a fatal case under inflammation of the brain, and 3 cases under chronic hydrocephalus. The admissions for diseases of the eye numbered 106, and all but 5 are returned under conjunctivitis. Only a death from syncope occurs under diseases of the circulatory system, against 3 cases and 2 deaths in the preceding year; while diseases of the respiratory system gave 193 admissions. The latter comprised 154 cases, 3 fatal, of bronchitis; 19, with 11 deaths, of croup; 14, 4 fatal, of pneumonia; 4, with 2 deaths, of laryngitis; a fatal case of abscess of the lung, and a death from œdema glottidis, and one from abscess of the larynx; also a case of chronic pneumonic phthisis. The admission rate for diseases of the digestive system, 86·7, shows a material increase of 16·5 per 1,000, but the ratio of mortality, 10·29, was 2·30 per 1,000 lower than in the previous year. There were 278 admissions from these causes,

Bengal.

of which 146 were for diarrhœa, and 74 for dentition; while of the 33 deaths returned 25 were from diarrhœa, 6 from teething, and one each from follicular tonsillitis and enteritis. Diseases of the lymphatic and glandular system caused 15 admissions and 3 deaths, the fatal cases being due to inflammation of lymph vessels 2, and congestion of spleen 1. Of the remaining cases embodied in the returns the only ones worth mention are 2 fatal cases under burns and scalds, heat apoplexy, and asphyxia from overlying respectively, and a death from drowning; also 2 cases of sunstroke, 11 of fractures, and a case each returned under concussion of the brain, and concussion of the cord respectively.

SANITARY CONDITIONS.—The following points regarding the health of the troops and the sanitary condition of the different districts and stations are taken from the reports of the Principal Medical Officer, Surgeon Major-General A. F. Bradshaw, C.B.

Presidency District.—Fort William.—The general sanitary condition of the barracks, hospital, &c., was satisfactory, but the Ravelin quarters were in the same unsatisfactory condition as reported last year. Sanction has since been given for the carrying out of certain measures designed to remedy the defects. During the year the hospital drainage was connected with the municipal drains, and it has worked satisfactorily. The municipal water supply was laid on to the hospital laundry. Dum Dum.—The District Principal Medical Officer does not consider the drainage of the cantonment satisfactory, but this is due to the natural disadvantages of the site. A scheme for improving the drainage is under consideration. The Principal Medical Officer also reports that the hospital accommodation is not sufficient, twenty more beds being required, also a ward for isolating special cases not of an infectious nature, and a ward for officers. He proposes that this extra accommodation should be provided by converting a building, formerly used as assistant surgeon's quarters, as this could be done at a reasonable cost. This proposal is under consideration. Barrackpore.—It is reported that the sanitary condition throughout the year was satisfactory. Darjeeling.—The supply of wood for warming purposes was not satisfactory, owing to its being wet. A mixture of wood and coal was substituted with advantage. The chimney of the hospital cook-house was faulty, causing much smoke in the kitchen, and therefore smokiness of the food. Representations having been made the defect was remedied. The method of disposing of the night-soil, namely, by burial on the side of a steep hill, is considered objectionable, as owing to the nature and slope of the ground it is impossible to carry out the rules regarding this plan of disposal. The question of substituting a better system has for a long time been under consideration. At present it is in contemplation to remove all filth to beyond cantonment limits, and trench it in the ordinary way in a piece of land near Ghoom railway station. Gnatong.—In consideration of the climatic conditions of such an altitude, 12,000 feet above sea-level, an extra ration was issued daily as follows:—September to May ½ lb. bread, ½ lb. fresh meat, 1 oz. cocoa: June to September the extra issue of bread was reduced to ¼ lb., the other items continued the same.

Allahabad District.—Allahabad.—Sanitary condition of cantonments reported to be satisfactory. During the year the masonry latrines for followers were replaced by movable structures of metal. Dinapore.—The Infantry barracks are old and in rather a dilapidated condition, otherwise the general sanitary condition was satisfactory throughout the year. Benares.—At this station also there were not any sanitary defects of importance reported.

Oudh District.—Lucknow.—The District Principal Medical Officer objects to absorption pits in this and other stations in the district as he considers they are of little value as means of disposal of bath-room water, and only tend to defile the subsoil. Otherwise no sanitary defects are brought to notice. The hospital accommodation is insufficient, and barrack rooms have frequently to be used for the sick. A scheme for the extension of the hospital has been sanctioned, and it is hoped that funds will before long be allotted for this work. No. 1 Redoubt, which was used in the previous year as a temporary hospital, has not lately been available for that purpose, it having been provided with guns and a detachment of Infantry located therein. No. 3 Redoubt has also been occupied during the year. Cawnpore.—At this station the hospital accommodation at times proved insufficient owing to the large number of patients with venereal disease under treatment, for whom tents had to be used. Fatehgarh, Sitapur.—At neither of these stations were any defects in sanitation brought to notice. Fyzabad.—Several blocks of married men's quarters which had been empty for years were taken into use for single men in the autumn, when the Regiment was over 1,000 strong. Previously to occupation they were cleaned and white-washed. During the year the ventilation of all the urinals in the Infantry Lines was increased. *Bengal.*

Absorption pits are replacing the open receptacles into which masonry surface drains run from wash-houses, where there is not sufficient gradient to carry the water away to the river.

Rohilkhand District.—Bareilly.—Both the District Principal Medical Officer and the Medical Officer in charge of the station hospital think the absorption pits unsatisfactory, but no other plan of disposing of bath-room water was proposed. Moradabad. Shahjahanpur.—At both these stations the general sanitary condition was satisfactory. Ranikhet.—Some of the barracks were in a leaky condition, but during the cold season, when the troops were transferred to the plains, several of these barracks were re-roofed. Repairs were also executed in several kitchens and ablution rooms, the floors of which had become defective. During the year the building of a new hospital to accommodate 50 patients was commenced. Chaubattia.—The hospital accommodation is not sufficient, and tents had frequently to be used to supplement it. Plans and estimates for a new hospital were being prepared. During the dry season the supply of water was rather scanty, and it is now proposed to make use of a spring in the reserve forest as an additional supply. Naini Tal.—Water is at present obtained from the lake, which is liable to pollution from the drainage of the hill sides. The result of analysis has, however, been generally good as regards absence of organic matter. It contains a large proportion of salts. The Principal Medical Officer of the district recommends that the barracks should receive the same water supply as is now distributed to the residents of the station by the municipality.

Nos. 1, 2, 3, and 4 Barracks, Tulli Tal. which had thatched roofs, have been re-roofed with sheet iron, the walls raised 2 feet, and extra windows made in each room.

Bundelkhand District—Agra.—The water supply is abundant, but the water is hard. It is intended to extend the city waterworks to cantonments. The general sanitary condition is satisfactory. Sipri.—The roofs of some of the barracks were in rather a defective condition during the rains, but this defect has since been rectified. Nowgong.—Only one absorption pit remains in use, that connected with the wash-house of the hospital, it works well. Those in barracks are not now used, as the wash-house drains have been connected with the main surface drainage of the barracks. Jhansi.—The Medical Officer in charge of the station hospital considers the well water at Jhansi to be the cause of the enteric fever which occurs there. He recommends that water be brought from the Pahuj river, as is done by the railway authorities for their employés. This subject is under consideration. The hospital accommodation at this station is very bad, the building being old, badly ventilated, and in bad repair. The Medical Officer considers that the high mortality among enteric fever cases during the hot months was due to the condition of the hospital, the air in which was hot, stagnant, and fœtid. He also attributes three cases of erysipelas which occurred among patients in hospital to the insanitary condition of the building, and states that 4 cases of heat apoplexy were met with among patients in hospital, but none among the men in barracks. Such improvements as were possible in this building were carried out as a temporary measure, and sanction was obtained for a new hospital which is now being built. During the year some of the old pattern infantry barracks had their roof tiles removed and replaced by thatch. This is considered a great improvement, as the tiled-roofed barracks were very hot during the summer months, and invariably leaked during the rainy season.'

In the Fort the building of a new barrack-room over the old one, which was so shut in by the ramparts that no air circulated through it, was commenced; as this new room will be above the level of the rampart it will catch all the breezes. Jubbulpore.—The general sanitary condition was very

Bengal.

satisfactory, but the Medical Officer in charge recommended that the water supply, which is excellent, should be extended to cantonments generally, and not as now only to the barracks, sadar bazar, and city. Saugor.—No insanitary condition at this station has been brought to notice. Pachmarhi.—The medical officer reports that result of analysis of the drinking water before the rains was satisfactory, but during the rainy season the water contained a marked amount of organic matter, probably of vegetable origin, which was removable by filtration. The sites of the wells are said not to be good, being too near the lake.

During the year a considerable extent of jungly growth surrounding the station has been cut, and this is considered to have had a marked effect in reducing the spread of malarial fever.

Two more barracks have had their walls raised and upper windows added.

The quarters occupied by the officers attending the musketry class have been condemned, new quarters recommended, and sites selected, but nothing further appears to have been done.

Meerut District.—Meerut.—The medical officer in charge of station hospital states that the level of the subsoil water has risen since 1873 from 14′ to 9′, this is due to irrigation, and is thought to be the cause of malarial fevers.

During the year the following improvements have been carried out:—Fire places built in the quarters for married soldiers, and in the Royal Artillery lines the old horse infirmary demolished. Movable latrines have been provided for the use of native followers and those of masonry abolished. The medical officer objects to the plan of grouping several together instead of placing one in each compound, but if this latter plan was adopted proper supervision could not be exercised. Muttra.—Both the Principal Medical Officer of the district and the medical officer in charge state that the absorption pits do not act well. The former has recommended that they should be abolished if they cannot be improved. The latter suggests that the wash-house water should be removed by hand, but this would entail much outlay, and is, therefore, not practicable. Delhi.—To the south-east of cantonments the land is heavily manured with night-soil taken from the municipal filth pits. The smell arising from this locality is an occasional nuisance to the officers who reside at that end of cantonments. Representations have been made to Government, but hitherto without result, owing to the expense which would be incurred in stopping it, which could only be done by purchasing the lands, or by compensating the present owners for stopping the manuring. Waterworks have lately been constructed and a large reservoir built on the ridge. Water is pumped from the river into this and then distributed to the city, but this supply has not yet been extended to the fort or cantonments, for which excellent water is obtained from a well in the compound of the Delhi Bank. Roorkee, Landour.—At both these stations the sanitary condition was very satisfactory. Chakrata.—There was some over-crowding in the barracks at this station owing to one of them having to be used as a hospital. Plans for building a new hospital at Kailana have been prepared, but funds have not yet been allotted.

Sirhind District.—The District Principal Medical Officer reports that he attributes the almost entire immunity of cholera throughout the district to the increased and improved water supply at Umballa, Kasauli, and Dagshai. With reference to the large number of cases of enteric fever at the last-named station, he remarks that the question of the microbe being present in excreta is generally received as certain, and as by burying this the subsoil is contaminated the necessity of destroying by fire all contents of soldiers' latrines is proved.

Experiments were carried out for six months in the camp of the Highland Regiments at Umballa, and one incinerator was found sufficient to dispose of the excreta of two Regiments (over 1,500 men). He is of opinion that the value of the incinerator cannot be over-estimated, and strongly recommends that incinerators be at once sanctioned, certainly for hill stations, and in time for the plains. Umballa.—The Medical Officer in charge also speaks favourably of the use of incinerators in the camp. He remarks that the general sanitary condition of the station was very satisfactory, but brings to notice the deficiency of bath and latrine accommodation in one block in the

Station Hospital. Jutogh. Solon.—At neither of these stations was any insanitary condition brought to notice, but the quality of the meat supplied to the troops was said to be very inferior. *Bengal.*

At Solon the hospital accommodation is insufficient. Plans of a proposed new hospital have been prepared, and it is hoped funds will soon be available. Kasauli.—A few cases of erysipelas occurred, which were ascribed to the close proximity of the mule lines to one of the barracks; the mules were removed, and no further cases occurred.

A great improvement was effected in the water supply from the north spring. In the beginning of the year a fresh spring was tapped by excavating some distance into the solid rock, and at the same time the stream which previously principally supplied the water for the spring, and which was liable to pollution by the surface drainage from the houses situated above, was diverted from the new spring by a masonry drain. Subathu.—At this station the water supply was rather scanty, otherwise the sanitary condition was satisfactory. Dagshai.—At this station, where a large number of cases of enteric fever occurred during the year, the Medical Officer remarks, "The water supply for the troops "was sufficient. It is obtained from springs, and collected in reservoirs, the "principal one being situated below the bazaar. The hill was excavated so "as to get near the source of the supply, and a stone drain was constructed so "that the water in the tank could not be contaminated after heavy rain by the "drainage from the sides of the hill. A new tank was also erected at the "opposite side of the hill, where there could not be any possible pollution, "and as doubt had been expressed by former medical officers on account of "the situation of the main supply of water being below the bazaar, I had "the drinking water drawn from the new tank, but it made no difference in "the spread of fever. There are also two small springs on the officers' hill, "both covered in, one being worked by a pump; they are chiefly used by "the officers' servants until they become dry in the hot season. The water "supplied to the troops was twice subjected to careful analysis by the "chemical examiner, Lahore, who on each occasion reported the water to be "of good quality and fit for issue." Regarding the disposal of excreta the Medical Officer states, "There is great difficulty in thoroughly carrying out "the trench system, as the soil is rocky, and crops do not grow well on the "ground that has been used for this purpose." He also remarks "that the "amount of fœcal matter passed is about 25 tons per 1,000 inhabitants in "the year, and there are over 3,000 people on the hill in the hot weather. "The trench system has been going on there for the last 40 years." He is of opinion that the whole of the hill has become saturated with sewage, and that this is the cause of the enteric fever which occurred there. He thinks that some means should be adopted for removing the excreta altogether from the hill for the purpose of being cremated.

The hospital accommodation is not sufficient. Plans for its extension have been prepared, but funds have not yet been allotted for this building, which is reported to be urgently required.

Lahore District.—Mian Mir.—The general health compared unfavourably with former years, this is due to an exceptionally hot summer, and an unusually heavy rainfall. No defects in sanitation were brought to notice. Jullundur. Fort Lahore.—At both these stations the general sanitary condition was satisfactory. Ferozepore.—The Medical Officer says, "The Sadar Bazaar "is as well kept as is possible under existing laws, but it is overcrowded, and "far from really clean." Amritsar.—Sanitary condition satisfactory. Movable latrines replaced those of the old pattern for followers. Multan.—The Medical Officer considers the subsoil drainage defective, otherwise the sanitary condition was satisfactory. Bhagsu.—No sanitary defects were brought to notice at this station. Dalhousie.—As the ground where the night-soil trenches are made is not, and cannot be, cultivated, it is recommended that a wire tramway system for removal of night-soil be introduced. This proposal is under consideration.

Rawalpindi District.—Rawalpindi.—Several improvements were carried out during the year. The city water supply was brought into the church lines, barracks, and the station hospital. The cavalry and Fort barracks were also supplied with this water for drinking purposes by means of carts. The pipes

Bengal.

for the proper cantonment supply have been got ready, but the pumping machinery not having been received from England, the water has not got further than the reservoir in the park.

The right division of the station hospital was re-roofed with tiles and the wards much improved.

Several barracks in the church lines were also re-roofed, and several masonry surface drains constructed.

A few quarters and mess rooms for one regiment and for the mountain battery on the west ridge were built, but most of the officers there are still under canvas. Sialkot.—The medical officer says a good system of drainage is much required. He recommends that a supply of water be obtained from the Chenab or its tributaries, as he thinks that the wells get frequently polluted by storm water. Campbellpore.—The general sanitary condition at this station was satisfactory. Attock.—The water supply in the hot season is somewhat precarious, the wells in the fort run very low, and water has to be fetched from a distance. The roof of the hospital leaked somewhat during the rains. Complaint is made of the sanitary condition of a village near the fort. These defects were being attended to. Murree.—Although analysis of the Murree springs gave satisfactory results, the drinking water was obtained from the Cliffden springs which were considered superior.

A water supply by pipes is to be given, and the work is progressing.

A wire tramway is in use for carrying the night soil down to the pits in which it is buried.

Khyra Gali, Bara Gali, Kala-bagh, Thobba, Ghora Dhaka, Kuldanna, Gharial, and Lower Topa.—At none of these small stations, which are in the Murree hills and are occupied only during the summer, were any defects in sanitation reported.

Peshawar District.—Peshawar.—The District Principal Medical Officer writes, "It was recommended that at least one tap of the pure filtered water "from the water works should be supplied to each barrack, lavatory, and "cook-house. The irrigation channel which passes close to the lines of all "corps contains water which is subject to much pollution before it enters "cantonments, and as it passes through the station, water-carriers will "naturally draw water from this polluted source if it is nearer than the "standards, or if there is any difficulty in filling their water-skins at these. "The skins themselves are a source of impurity and are used freely for all "purposes and not confined only to carrying pure water for the filters. They "use them for road watering and for cleaning floors, and for this purpose any "water is used and not always emptied out. This difficulty has been got rid "of by using zinc buckets instead of the skins, but the only safe plan is to "lay water on to all places where it is required." Nowshera.—The general sanitary condition of this station was satisfactory. Cherat.—The warming arrangements were complained of, but usually these are not required. Last year owing to the amount of sickness in Peshawar the troops were kept later than usual in Cherat, and therefore experienced cold weather towards the end of their stay there.

Hospital accommodation is insufficient, so tents have to be used to supplement the wooden huts. A plan for a new hospital has been approved, but funds for this work have not yet been allotted.

Lavatory accommodation is very deficient, as is also that for women and children, many of whom have to live in tents.

Night soil is disposed of by separating the urine from the solid excreta, which are well mixed with dry earth and then buried in trenches, the ground available for which is limited. The urine is disposed of by shoots down the hill side. The use of incinerators is strongly advocated as a substitute for these arrangements.

Quetta District.—Quetta.—Several improvements in the barracks and out-houses were carried out during the year.

The quarters for officers in the British infantry lines are still defective, being deficient in space and ventilation. Representations have been made on the subject, and it is hoped that funds will be allotted soon to enable necessary improvements to be made.

II.—MADRAS.

Madras.

The average strength of warrant officers, non-commissioned officers and men during the year was 13,182, a decline of 74 from the number during the previous year.

The following table shows the more important of the health statistics of the troops during the year :—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally discharged.	Constantly Sick.
13,182	16,241	159	9	168	437	178	1098·41	1232·0	12·74	33·15	13·50	83·33

Comparing the above with the corresponding results in the preceding year, a decline of 65·4 per 1,000 has occurred in the ratio of admission, one of 2·04 in that of mortality, and one of ·04 in that of constantly sick, and compared with similar average ratios for the previous ten years a decrease has occurred in the admission and death rates equal to 31·0 and 1·15 respectively, while the constantly sick rate has increased by 8·18 per 1,000. With regard to this decennial comparison it must be pointed out that the figures for the year under report and for the three preceding years include the sickness and mortality among the troops in Upper Burma, which those for previous years did not.

The average sick time to each soldier was 30·50 days, which is longer than the corresponding period in the previous year by ·07 of a day, and than the average period for the preceding ten years by 3·07 days. The average duration of each case of sickness was 24·75 days, which is 1·30 days longer than the similar period in the previous year, and longer than the decennial average period by 3·03 days.

The loss to the Command by death and invaliding to England was 596 men, as compared with 603 in the previous year, and the loss to the service by death and final discharge as medically unfit for further service was 346, being in the ratio of 26·25 per 1,000 of strength, a decrease of 4·98 on the corresponding rate in the preceding year.

In Abstract XXIV. will be found a table from the report of the Principal Medical Officer, which gives the most important of the statistics of sickness and mortality of the different districts and stations in the Command. As regards the districts, the highest admission ratio was in Myingyan and Mandalay, being 1550·7, a decrease below previous year of 236·1. The next was 1411·3 in Rangoon district, an increase over previous year of 127·5. The lowest rate was 738·8 in the Southern district, a decrease of 411·1 below previous year, the next lowest being 1049·6 in Belgaum and Bangalore, a decrease below previous year of 169·7. The highest mortality rate was 18·77 in Myingyan and Mandalay, a slight decrease below previous year, the next being 16·16 in Madras district, also a decrease of 3·05. The lowest mortality rate was 7·13 in Belgaum and Bangalore, a decrease of 3·18 below previous year, and the next lowest, 9·21, in the southern district, an increase of 3·61.

With regard to individual stations (with an average of not less than 100 men) the highest admission rate was at Myingyan, being 2427·9, an increase over previous year of 381·6; the next highest was Meiktila, with 1774·2, also an increase of 411·0, and next Bhamo with 1688·5, a decrease of 315·5. The lowest rates were 553·6 at Wellington, next 719·2 at Port Blair, and next 856·4 at Bellary, being a decrease of 377·5, 259·7, and 675·7 respectively below rates for previous year. The mortality rate was highest at Myingyan. being 69·65, an increase of 42·62 over previous year. Next came Meiktila with 21·50, also an increase of 8·68, and next Mandalay with 20·75, a decrease

Madras. of ·46. The lowest mortality rate was at Bhamo, being only 4·09, next Shwebo with 5·11, and next Belgaum 5·42, a decrease of 3·91, 14·85, and ·24 respectively below the previous year's rates, while at Cannanore and Calicut there was no mortality. The more important of the statistics of sickness and mortality of the different arms of the service and of the different regiments, batteries, and corps which served in the Command during the year are given in Abstract XLII., in a table taken from the report of the Principal Medical Officer.

In the cavalry the admission rate was 1425·7, mortality rate 11·77, and constantly sick 98·84, a decrease below the previous year of 218·8, 6·70, and 23·86 respectively. In the artillery the admission rate was 1198·5, death rate 11·38, and constantly sick 85·51, a decrease in the first two of 25·0 and 5·53 respectively, but an increase in the latter of 2·03. In the engineers the admission rate was 666·7, death rate *nil*, and constantly sick 30·00, being an increase of 372·6, a decrease of 117·6, and an increase of 3·82 in these rates respectively. In the infantry the admission rate was 1228·4, the death rate 12·12, and constantly sick 79·42, being a decrease of 113·2, 2·43, and 3·39 respectively below previous year.

The following table has been prepared to show as far as possible the influence of age on sickness and mortality among the troops during the year:—

Ages.	Average Strength.	Admissions.	Deaths in Command.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years - -	366	503	1	5	1374·3	2·73	13·66
From 20 to 24 years -	6,817	9,809	80	220	1438·9	11·73	32·29
„ 25 „ 29 „ -	4,466	4,966	59	158	1111·9	13·21	35·38
„ 30 „ 34 „ -	993	694	13	42	698·9	13·09	42·30
„ 35 „ 39 „ -	390	171	3	10	438·5	7·69	25·64
Over 40 years - -	125	43	3	2	344·0	24·00	16·00
Not stated - -	25	55	—	—	—	—	—
Total - -	13,182	16,241	159	437	1232·0	12·06	33·15

This shows that the highest admission ratio was between 20 and 25 years of age, this being 1438·9. In previous year this period was also highest, being 1506·0. The lowest rate was in those of 40 and upwards. The rates on the whole are very similar to the previous year, the death rate being less, but the invaliding rate higher.

The next table is given to show as far as possible the influence of length of service in the country on the sickness and mortality among the troops during the year:—

Length of Service.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year - -	2,449	4,097	34	46	1672·9	13·88	18·78
From 1 to 2 years -	2,202	2,881	26	71	1308·4	11·81	32·24
„ 2 „ 3 „ -	2,220	2,413	22	82	1086·9	9·91	36·94
„ 3 „ 4 „ -	1,926	2,663	27	63	1382·7	14·02	35·31
„ 4 „ 5 „ -	2,288	2,139	20	64	934·9	8·74	27·97
„ 5 „ 10 „ -	1,589	1,741	25	92	1005·7	15·73	57·90
„ 10 years and upwards	483	252	5	14	521·7	10·35	28·99
Not stated - -	25	55	—	—	—	—	—
Total - -	13,182	16,241	159	437	1232·0	12·06	33·15

Madras.

The highest admission rate was in those in their first year of service, but in previous year it was in those in their fourth year. The lowest rate was in those of ten years' service and upwards. The mortality rate was highest in those between five and ten years, but less than in previous year. The lowest rate was in those from four to five years' service, and the same was the case in previous year. The invaliding rate was highest in those from five to ten years' service, also the same as in previous year.

The admissions, deaths, invaliding, &c., arranged according to the different groups and orders of diseases are shown in Abstract XXII., and in Abstract XXIII. are given the sickness and mortality in each of the administrative circles.

General Diseases.—*Diseases dependent on Morbid Poisons.*—The admissions under the head of *eruptive fevers* were 11 in number, as compared with 109 in the preceding year. For *small-pox* there were three admissions and 1 death, compared with two admissions and no deaths for 1891, or a ratio of ·2 admissions and ·08 deaths against ·2 and *nil* respectively in the previous year. *Other eruptive fevers* caused 8 admissions against 107 for the previous year, or a ratio of ·6 admissions against 8·1 for last year.

Enteric Fever occasioned 154 admissions and 40 deaths, compared with 141 cases and 41 deaths in 1891, giving a ratio of 11·7 admissions and 3·03 deaths against 10·6 and 3·09 respectively for the previous year. In Abstract XXV. will be found a table taken from the report of the Principal Medical Officer, showing the stations at which the admissions for, and deaths from enteric fever took place in each of the four quarters of the year. Of the 154 admissions 63 were admitted at Secunderabad, and 15 of them proved fatal. At Bangalore there were 33 admissions with 4 deaths. Madras contributed 15 admissions with 5 deaths. At Wellington there were 10 admissions and 4 deaths. Meiktila gave 6 admissions and 4 deaths, Thayetmyo 5 admissions with no deaths, Rangoon 4 admissions and no deaths, Bellary and Mandalay 3 admissions each, Myingyan 2 admissions and 2 deaths, Bhamo, Belgaum, and Toungoo 2 admissions with one death each, St. Thomas' Mount, Malapuram, and Fort White one admission and one death each, and Calicut one admission and no death.

Simple Continued Fever contributed 819 admissions with one death compared with 937 admissions and no death for last year, or a ratio of 62·1 admissions and ·08 deaths against 70·7 and *nil* respectively for the previous year.

Cholera caused 8 admissions with 7 deaths compared with 29 admissions and 21 deaths for the previous year, or a ratio of ·6 admissions and ·53 deaths against 2·2 and 1·58 respectively for 1891. In Abstract XXVI. is a table, taken from the report of the Principal Medical Officer, showing the stations in the Command at which the admissions and deaths from cholera took place in each of the four quarters of the year.

Dysentery gave 581 admissions and 16 deaths against 635 with 6 deaths for the previous year, giving a ratio per 1,000 of 44·1 admissions and 1·21 deaths compared with 47·9 and ·45 respectively for 1891. Of the total admissions for this disease 201 admissions with 5 deaths occurred in the Secunderabad district, giving a ratio of 71·5 admissions and 1·78 deaths, compared with 31·5 and ·37 respectively for 1891. The Belgaum and Bangalore districts gave 123 admissions and 1 death, or a ratio of 33·7 admissions and ·27 deaths against 25·8 and ·27 respectively for the previous year. There were 119 admissions with 3 deaths in the Rangoon district, giving ratios of 62·7 and 1·58 against 95·0 and ·54 for last year. Myingyan and Mandalay districts caused 70 admissions and 4 deaths, or a ratio of 29·2 admissions and 1·67 deaths against 57·3 and 1·13 respectively for previous year. There were 15 admissions and no deaths in the Madras district, giving a ratio of 15·2 admissions against 22·2 admissions. Southern district contributed 15 admissions and one death, or a ratio of 17·3 admissions and 1·15 deaths against 65·8 and no deaths for last year. Five admissions and one death occurred on the march, giving a ratio of 200·0 admissions and 40·00 deaths against 92·6 and nil respectively for 1891. The causes were chiefly climatic.

Other Diseases of this sub-group were the cause of 164 admissions with no deaths compared with 109 cases with one death, or a ratio of 12·4 admissions and *nil* deaths against 8·2 and ·08 respectively for last year.

Madras.

Malarial Fevers caused 2,293 admissions and 13 deaths compared with 3,314 cases and 15 deaths in 1891, or a ratio of 174·0 admissions and ·99 deaths against 250·0 and 1·13 respectively for the previous year. Malarial fevers prevailed chiefly in the Myingyan and Mandalay, Rangoon, Madras, and Secunderabad districts.

Septic Diseases.—Under this head there were 8 admissions with one death compared with 7 admissions and 3 deaths in 1891, giving a ratio of ·6 admissions and ·08 deaths against ·5 and ·23 respectively for 1891.

Venereal Diseases.—There were 1,718 admissions for *primary syphilis*, equal to a ratio 130·3 per 1,000, which is higher than that in the previous year by 9·0, and than the average rate of the six preceding years by 19·6. The average constantly sick rate, 12·00 per 1,000, is higher than the previous year by 1·20, and than the average by 2·36. Including the sickness from venereal ulcer, for which there were 697 admissions and 55·51 constantly sick, the ratio of admission for primary venereal sores was 183.2 per 1,000, which is higher than in the previous year by 19·4, and than the average of six years by 6·6. The ratio of constantly sick was 16·21 per 1,000, which is higher in both these comparisons by 2·40 and 2·05 respectively. *Secondary syphilis* caused 976 admissions and 5 deaths, including four of invalids after leaving the command. The ratio of admission, 74·0 per 1,000, being fractionally lower than that of the previous year, but above the sexennial average rate by 19·7 per 1,000. The ratio of constantly sick was 8·71 per 1,000, fractionally below the preceding year's rate, but above the average rate by 2·78. *Gonorrhœa* caused 1,696 admissions, and there were 124·81 men constantly sick from this affection. The admission ratio, 128·7 per 1,000, is slightly above that of the previous year, but is below the sexennial average rate by 17·2; the constantly sick rate, 9·47 per 1,000, is higher by ·25 than in the previous year, but lower than the average by 1·16. Including all forms of venereal disease the total admission rate was 385·9 per 1,000, which shows an increase of 20·5 on the previous year's rate, and of 9·1 on the sexennial average rate. The total rate of constant inefficiency from venereal diseases was 34·39 per 1,000, which is higher by 2·44 and 3·69, respectively, than those of the previous year and of the sexennial period.

The comparative prevalence of venereal diseases, not including simple venereal ulcer in the different districts, is given in Abstract XXIII.

With regard to primary syphilis Belgaum and Bangalore Districts furnished 540 admissions, or a ratio of 148·0 admissions against 141·4 for the previous year. The Secunderabad District gave 417 admissions, or a ratio of 148·3 compared with 135·9 for last year.

Rangoon District returned 324 admissions, or a ratio of 170·6 against 172·2 for 1891.

The Myingyan and Mandalay Districts shows 274 admissions, or a ratio of 114·3 compared with 65·7 for the previous year.

The Southern District furnished 72 admissions, or a ratio of 82·8 against 102·2 for last year.

Madras District contributed 32 admissions, or a ratio of 32·3 against 103·1 for the previous year.

Secondary Syphilis.—The largest number 292 cases were treated in the Belgaum and Bangalore Districts, giving a ratio of 80·0 against 106·6 for 1891.

Rangoon District comes next with 194 admissions, or a ratio of 102·2 compared with 58·5 for last year.

Secunderabad District furnishes 164 admissions and one death, or a ratio of 58·3 admissions and 36 deaths against 52·6, and *nil* respectively for the previous year.

Myingyan and Mandalay Districts return 120 admissions, or a ratio of 50·1 admissions against 73·6 for the previous year.

Madras District furnishes 61 admissions, or a ratio of 61·6 against 48·5 for last year.

Southern District gives 22 admissions, or a ratio of 25·3 against 53·2 for 1891.

Gonorrhœa.—This disease was more prevalent in the Secunderabad, and Rangoon, Belgaum and Bangalore, and Myingyan, and Mandalay Districts than in the other circles of medical administration.

Parasitic Diseases caused 43 admissions, or a ratio of 3·3 compared with 1·4 for last year. Of the 43 admissions under this head tænia solium caused 36, and ascaris lumbricoides 4. Eight cases of tape-worm occurred at Rangoon, 6 at Mandalay, 5 at Madras, 3 at each of the stations of Myingyan and Secunderabad, 2 at each of the stations of Bangalore, Bellary, Thayetmyo, and Bhamo, and one at each of the stations of St. Thomas' Mount, Wellington, and Toungoo. *Madras.*

Alcoholism.—There were 58 admissions and one death for alcoholism, 2 of which were for delirium tremens. The ratios for these diseases was 4·4 admissions and ·08 deaths against 6·1 and ·15 respectively for 1891.

Debility caused 349 admissions, with two deaths, or a ratio of 26·5 and ·15 respectively against 27·9 admissions and ·08 deaths for last year.

Rheumatism gave 523 admissions and 2 deaths, being a ratio of 40·0 admissions and ·15 deaths compared with 36·4 and *nil* respectively for the previous year.

Tubercular Diseases.—There were 29 admissions and 10 deaths for tubercle, including two invalids, who died after leaving the Command, or a ratio of 2·2 admissions and ·76 deaths against 2·7 and ·45 respectively for the previous year. Secunderabad and Rangoon Districts furnished the largest number of cases, viz., 5 each.

The Secunderabad District gave a ratio of 1·8, the Rangoon District one of 2·6, the Myingyan and Mandalay Districts one of 1·7, Belgaum and Bangalore Districts 1·1, Madras District 3·0, and the Southern District one of 2·3 ; of the 8 deaths 3 took place at Secunderabad, and one each at Madras, Wellington, Mandalay, Poonamallee, and on the line of march.

Twenty-six of the admissions and all of the deaths were due to tubercular disease of the lung.

Other Diseases of this group furnished 156 admissions, or a ratio of 11·8 compared with 9·8 for 1891.

LOCAL DISEASES.—There were 185 admissions and 8 deaths for *diseases of the nervous system.* Of these 168 admissions and 7 deaths were due to nervous diseases and 17 admissions and one death to mental disorders, giving a ratio of 12·7 admissions; and ·53 deaths for the former, and 1·3 and ·08 respectively for the latter. Neuralgia gave 108 admissions, vertigo 22, epilepsy 10, megrim, and hysteria 5 each. Congestion of pia and dura mater caused one death, inflammation of brain 2, inflammation of cerebral membranes of brain 1, abscess of brain 1, softening of brain 1, and apoplexy 1. Of the mental diseases 9 admissions were for melancholia, 5 dementia, 2 mania, and 1 insanity. One death occurred from mania.

Diseases of the Eye occasioned 157 admissions, giving a ratio of 11·9 compared with 13·3 for the previous year. The chief affections were conjunctivitis 111, iritis 6, and ulcer of cornea 4.

Diseases of other Organs of Special Senses.—There were 175 admissions, or a ratio of 13·3 against 13·1 for last year.

Diseases of the Circulatory System.—These occasioned 72 admissions and 3 deaths, or a ratio of 5·5 admissions and ·23 deaths against 6·0 and ·45 respectively for 1891. Of these palpitation caused 37 admissions, valve disease of the heart 17, varix 7, hypertrophy of heart 6, and syncope, aneurysm of renal artery, and aneurysm of thoracic aorta caused one death each.

Diseases of the Respiratory System caused 390 admissions and 6 deaths, one being that of an invalid, or a ratio of 29·6 admissions and ·45 deaths against 28·5 and ·75 respectively for last year. The chief affections were bronchitis 335, pneumonia 25 admissions with 4 deaths, pleurisy 19 and one death; and chronic pneumonic phthisis 4 admissions. The death of the invalid was due to the last-mentioned disease.

Digestive System.—Under this heading there were 1,519 admissions and 28 deaths, an invalid having died after leaving the Command, giving a ratio of 115·2 admissions and 2·12 deaths compared with 105·2 and 1·96 respectively for last year. Of these congestion of liver occasioned 237 admissions, inflammation intestine (catarrhal) 270, sore throat 170, dyspepsia 94, diarrhœa 105, piles 80, hepatitis 106, abscess (dental) periosteum 51, and follicular tonsillitis 83. Absceas of liver caused 13 deaths, inflammation intestine

Madras. (catarrhal) 4, enteritis 3, and congestion of liver, melæna, hepatitis, inflammation of stomach, typhlitis, hernia, and peritonitis caused one death each. The death of the invalid was from obstruction of intestines.

The Rangoon district furnished, as it usually does, the highest ratio of admissions for diseases of this class, the ratio being 153·8 admissions and 4·21 deaths. Myingyan and Mandalay districts come next with a ratio of 147·7 admissions and 2·92 deaths, Madras district 139·4 admissions and 4·04 deaths, Secunderabad district 99·6 admissions and ·36 deaths, Belgaum and Bangalore districts 88·2 admissions and 1·37 deaths, Southern district 64·4 and no deaths.

In Abstract XXVII. is a table showing the prevalence of, and mortality from, diarrhœa and hepatitis, and abscess of the liver in each of the divisions of the Command during the year, and in Abstract XXVIII. there is a table showing the prevalence of, and mortality from, these diseases in each quarter of the year.

Diseases of the Lymphatic and Glandular System caused 703 admissions and one death, or a ratio of 53·3 admissions and ·08 deaths, compared with 54·1 and *nil* respectively for last year. Of these, inflammation lymph glands (inguinal) caused 605, suppuration of lymph glands (inguinal) 71, inflammation of lymph glands (cervical) 18, and enlargement of spleen 2; splenitis caused one death.

Diseases of the Urinary System.—Under this heading there were 40 admissions and 3 deaths, giving a ratio of 3·0 admissions and ·23 deaths, against 2·8 and ·45 respectively for last year. There were 13 admissions for incontinence of urine, 12 inflammation of bladder, 9 Bright's disease, and 2 acute nephritis. Two deaths occurred from Bright's disease, and one from disseminated suppurative nephritis.

Diseases of the Generative System occasioned 936 admissions, or a ratio of 71·0 admissions, compared with 60·0 admissions and deaths *nil*. Ulcer of penis caused 697 admissions, inflammation of testicle 130, inflammation of glans penis 32, stricture of urethra 27, inflammation of penis and hydrocele 14 each, varicocele 6, and paraphimosis 5.

Diseases of the Organs of Locomotion caused 107 admissions, giving a ratio of 8·1 against 6·3 for the previous year. Of these, 73 were for synovitis, 8 contraction of tendons, inflamed bursa and periostitis 6 each, and inflammation of bone 3.

Connective Tissue.—Under this heading there were 248 admissions, or a ratio per 1,000 of 18·8 admissions, against 20·2 for 1891. Abscess of connective tissue caused 175 admissions, and inflammation connective tissue 73.

Skin Diseases occasioned 810 admissions, giving a ratio of 61·4 admissions, compared with 68·6 for the previous year. The chief affections were boil 307, ulcer 185, whitlow, including onychia, 85, eczema 83, ringworm 58, and itch 27.

Poisons caused 6 admissions with one death, or a rate of ·5 admissions and ·08 deaths, against ·6 and ·15 respectively for the previous year. Of these, 3 admissions and one death were due to poisoned fish, and one admission each from morphia poison, stinging insect and poisoned dog-bite.

General Injuries caused 19 admissions and 14 deaths, or a ratio of 1·4 admissions and 1·06 deaths, compared with 3·5 and 2·19 respectively for 1891. Of the deaths 8 were from heat apoplexy, asphyxia, from submersion accidental 2, and sunstroke, multiple injury, asphyxia from submersion, self-inflicted, and asphyxia from plugging of air passages one each. The details of the cases of homicide and suicide are as follows:—

Multiple injury, homicidal.—A gunner, No. 4 Company, Eastern Division, Royal Artillery, was found lying dead in a pool of blood outside the sergeants' mess at Thayetmyo on the 30th November 1892. Death was caused by incised and stab wounds. There were four incised wounds and seven stab wounds. A court of inquest was held, and the verdict returned was "wilful murder by some person or persons unknown."

Asphyxia from submersion (suicidal).—A private of 2nd Battalion, Somersetshire Light Infantry, committed suicide by drowning himself in the Fort ditch at Madras on the 9th July 1892. The motive is not known. An inquest was held and the verdict returned was that the man "committed suicide by drowning, while in a state of temporary insanity."

Madras.

Local Injuries.—There were 1,265 admissions and 4 deaths from local injuries, or a ratio per 1,000 of 96·0 admissions and ·30 deaths against 96·3 and ·60 respectively for 1891. Of the deaths, one was from concussion of brain, one gunshot wound self-inflicted, one dislocation and one fracture. The details of these cases are as follows:—

A gunner, M Battery, Royal Horse Artillery, died at Secunderabad from "concussion of brain," caused by a fall from the limber of a gun during camp of exercise.

A private, 1st Battalion, Cheshire Regiment, shot himself at Belgaum. The whole of the back of the skull was blown away, also the brain. A verdict of "suicide while in a state of temporary insanitary" was returned. Motive unknown.

A private, 1st Battalion, Cheshire Regiment, died at Belgaum from "dislocation of spine" (complete), caused by a fall while swinging by means of his "hocks" off the horizontal bar in the gymnasium.

A driver, M Battery, Royal Horse Artillery, died at Secunderabad from "fracture of skull," caused by the fall of a gun over him while on parade.

Surgical Operations.—Four primary operations were performed. A primary amputation of the finger for gunshot wound, one removal of a bursal tumour of leg, one strangulated hernia, and one for removal of the thumb.

Invaliding.—The number of men invalided home during the year was 437, being in the ratio of 33·15 per 1,000, which is higher by 1·84 than in previous year, and by 4·58 than the previous decennium.

In Abstract XLII. will be found the invaliding ratios for the different arms of the service, and also of the several corps that served in the command during the year. On previous tables are shown the effects of age, and service in the country, on invaliding. The principal causes of invaliding were secondary syphilis 94, debility 48, dysentery 31, tubercle of lung 15, valve disease of heart 13, anæmia 12, and malarial cachexia 11. The invalids finally discharged the service were 178 in number, giving a ratio of 13·50 per 1,000. The principal disabilities necessitating discharge were secondary syphilis, 28 cases, or 2·12 per 1,000, a decrease of 1·42 on the corresponding rate in the previous year; debility 23 cases or 1·74 per 1,000, an increase of ·46; tubercular diseases 12 cases, or ·91 per 1,000, a decrease of ·75; diseases of the nervous system 31 cases, or 2·35 per 1,000, a decrease of ·28 (including 20 cases, or 1·52 per 1,000, for mental disease, a decline of ·21); diseases of the circulatory system 17 cases, or 1·29 per 1·000, a decrease on the corresponding ratio of the previous year of ·67; and for injuries there were 13 cases, or ·99 per 1,000, an increase of ·38 on the previous year's rate.

Officers.—The average annual strength was 394 compared with 390 for the previous year. There were 389 attacks of illness among them, 6 deaths, and 62 invalided, giving a ratio per 1,000 of 987·3, 15·23 and 157·36 respectively. A decrease in the rate of sickness is observed of 110·1 and an increase of 4·97 of deaths, and of 18·90 in invaliding. The chief diseases from which the officers suffered were ague 45, simple continued fever 42, inflammation intestine (catarrhal) 23, remittent fever 22, malarial cachexia 15, congestion of liver and influenza 10 each, and debility and rheumatism 13 each. The deaths were due to the following causes:—3 from enteric fever, 2 hepatitis, and one heat apoplexy.

Women.—Out of an annual strength of 755 women, there were 737 admissions and 10 deaths, being in the ratio per 1,000 of 976·2 admissions and 13·24 deaths, showing an increase of 17·9 in admissions and ·62 deaths of those on the previous year. The chief causes of admissions were debility 260, ague 49, anæmia 34, bronchitis 31, simple continued fever 30, dysentery 27, inflammation intestine (catarrhal) 18, and conjunctivitis 17, ague, enteric fever, cholera, remittent fever, alcoholism, tubercle of lung, syncope, pneumonia, pleurisy, and premature labour caused one death each.

Children.—An average strength of 1,427 gave 931 admissions and 43 deaths, or a ratio per 1,000 of 652·4 admissions, and 30·13 deaths compared with 741·7 and 53·26 respectively for last year.

Madras.

The following diseases caused the greater number of admissions and mortality among children :—

— —	Admissions.	Deaths.
Bronchitis	152	3
Simple continued fever	97	1
Debility	73	1
Inflammation intestine, catarrhal	63	6
Teething	55	6
Ague	47	—
Dysentery	33	2
Ascaris lumbricoides	18	—
Diarrhœa	14	2
Infantile convulsion	11	7
Pyæmia	1	1

Sanitary Conditions.—The following remarks on the health of the troops and the sanitary conditions of the different districts and stations are taken from the report of the Principal Medical Officer, Surgeon-Major-General T. N. Hoysted :—

Belgaum and Bangalore District.—The general health of the troops in this district has been good, and the sanitation of the barracks and outbuildings has been well looked after. At Bangalore the Parade or Infantry and the Ulsoor Barracks for British troops are situated too close to the cantonment bazaars. The accommodation in the Parade Barracks is only made sufficient by using the inner verandahs as dormitories, which is objectionable. The barracks occupied by the cavalry and field artillery are close together, and are known as the " Agram Barracks." The Horse Artillery or Ulsoor Barracks are at a little distance to the north. The canteens for both the artillery and cavalry afford ample accommodation. There are urinals in the proximity of each. That for the cavalry is too small, badly situated, and unsatisfactory. It has been condemned, and a new one is about to be erected. The drainage is good. The rain water is carried off by surface drains well laid and lined with flags. The absence of a good and sufficient water supply is the chief blot on the sanitary condition of Bangalore. The water which is used for the European troops is obtained from the Ulsoor tank. This tank from its position must necessarily receive a large proportion of the surface drainage in its vicinity. The supply from it has generally been found barely sufficient for the troops, and scarcely a year passes that it has not been necessary to place more or less restriction on the use of it by the civil population. This year, owing to the total failure of the north-east monsoon, the supply has become so short that it is feared some if not all of the European troops will have to be temporarily removed from the station if rain does not fall. In the North Station Hospital there are no quarters for the Army Hospital Native Corps. The men have to live away in the bazaars. This is very unsatisfactory for many reasons. No quarters are provided for the apothecaries. They have to live a long distance from the hospital; this is often of great inconvenience.

At Belgaum the Royal Artillery and new British Infantry Barracks are mostly well-constructed double-storied buildings. The Fort lies about 1½ miles to the east of the cantonment. One company of the British infantry is stationed there and relieved monthly. The barracks are all single-storied buildings, well constructed and ventilated. There is no overcrowding in any of the barracks in Cantonment or the Fort, the accommodation being ample. The general condition of drainage throughout the station is satisfactory. The natural conformation of the ground enables surface drainage to be carried out with facility and efficiency. The water supply is obtained from wells and is of good quality and abundant. Sometimes towards the end of the hot weather it becomes somewhat scanty in some of the wells on high ground. In all the barracks the lavatories are very good, except G, B, and D blocks, British Infantry Barracks, which are provided with tents as a temporary measure; permanent lavatories are being erected. The latrines are well-built, and well-ventilated masonry buildings. At night the receptacles for urine are brought into the verandahs on the ground floor buildings, and in the upper stories they are placed at each end of the barrack-room on asphalted platforms. It would be an improvement if the roof of the building was prolonged in such a way as to cover these platforms and thereby afford protection during the heavy rains which prevail in this station. The canteens are provided with good English beer. The coffee shops are stocked with English stores of various kinds and of good quality. The aërated waters are manufactured by each corps under proper supervision. *Madras.*

The Station Hospital affords ample accommodation. The floors of the verandahs of two wards and one latrine are made of "rammed earth," which is objectionable. A few isolated wards for special cases, a ward for officers, and a permanent ward for the treatment of infectious cases in lieu of the temporary grass and bamboo hut which now exists, would be desirable improvements. A laundry for disinfecting clothing and bedding, &c., of patients with infectious diseases is much needed. At Bellary the Infantry barracks consist of 11 blocks *en échelon*, built on a red sandy soil. They afford ample accommodation. The barracks for the artillery are about half a mile from the Infantry barracks. The water is conveyed from an Artesian well ¾ mile away by means of a covered aqueduct into two small wells, and from thence distributed by mussacks. The water is sufficient and of good quality. A second source of supply is a large moat at the base of the Fort Rock, which usually contains a plentiful supply, but last year was dried up. The Station Hospital is a handsome, commodious, two-storied building. The wards are very lofty and well ventilated. An unused hospital apprentices' quarters is set apart for contagious diseases, there being no contagious hospital proper. It is suitable for one patient. A hospital for contagious cases for males and females is greatly needed.

The Ramandroog barracks are substantial buildings, and are situated at the western side of the plateau. As the barracks are built on the sloping plateau the drainage is excellent. The hospital is a good permanent building, with accommodation for eight beds. There is no building that can be used as quarters for the Army Hospital Native Corps. This is a pressing want, as the nights are always cold, and the days in May and June are often rainy, and the village is too far away for the hospital servants to be allowed to live there. The water supply is taken from two cemented reservoirs in a nullah, on the western side of the range. The water is charged with iron, and is, therefore, an excellent tonic. It is abundant, and of excellent quality.

Southern District.—The health of the troops in this district has been good. The sanitation of the barracks and hospitals has been well attended to. At Wellington the existing system of drainage consists of one masonry underground drain, two masonry surface drains, three surface drains, unlined with masonry. Water from the roof, and washing froom the cook-houses pass directly into the underground drains. These drains discharge into masonry surface channels, and the liquid flows out of these on to the hill sides, in which cesspools are formed. Both the hill sides, especially that between the barracks and the lake, are in an insanitary condition. The water for drinking and cooking purposes is procured from three spring wells built of masonry. As the standing barrack committee have pronounced the present position of the men's kitchens inconvenient and insanitary, five detached double-company cook-houses are to be built. Nothing has yet been done to replace the three condemned guard-room cells, referred to in the Report for 1891, and during the season the present cell accommodation has been insufficient. Neither the latrines nor urinals can be considered as satisfactory for want of proper drainage and means for flushing. The hospital is situated on a spur of a hill, about 200 yards from the barracks, arranged in two parallel one-storied

Madras.

masonry buildings 90 feet apart. The accommodation is by no means sufficient for the strength from March to October, consequently tents have to be pitched in the hospital compound, in which venereal cases are treated. Nothing has been done in the way of extending the hospital buildings. There is no place to store the increased equipment. The Army Hospital Native Corps were provided with suitable quarters in the Sapper lines. At Cannanore the barrack rooms are large airy buildings with double verandahs and covered ways to latrines, wash-houses, and ablution rooms. The drainage about barracks are large pucka-built open drains, converging to three covered main drains, which empty on the sea shore. All the water used by the troops is obtained from pucka-built wells sunk in the laterite rocks. The quality has been very good. The meat supplied is poor, and the carcases small. The bread is good in quality. At Calicut the buildings consist of two barracks for the accommodation of the men, each containing six rooms well ventilated and surrounded with verandahs. The married quarters are not provided with ablution rooms. The water supply is from two wells. The water has been recently tested and found to be of excellent quality. The surface drainage might be improved, the drains are not carried far enough away from the buildings. In the station hospital the wards are comfortable, well ventilated, well lighted, and provide sufficient cubic space for the usual amount of sick.

At Malapuram the barracks are situated on a flattened eminence about 500 feet above sea-level and 200 feet above the village of Malapuram. The situation is healthy and the natural conformation is well aided by surface drains. The water supply is derived from wells, and has been good and abundant. The quality of the rations has been satisfactory. Vegetables are always scarce and difficult to obtain. The hospital is a very good building and in every way suitable for the purpose required. A new cook-house has been built, which is well constructed and ventilated. The dry earth store was completed during the year.

Secunderabad District.—The health of the troops in the district has been fair. The sanitation of the barracks, hospitals, and out-buildings has been well looked after.

At Secunderabad the first infantry barracks consists of large, well-ventilated buildings, with inner and outer verandahs. They are built of brick and stone, terraced roof stone floor, situated within the entrenchment, and afford ample space for the troops quartered therein. The second infantry barracks are situated to the south, and commence 500 yards outside the entrenchment, running *en échelon* for distance of a mile. Each barrack has a transverse central portion constructed for a dining hall. The accommodation is insufficient. A central gymnasium is required, and the present barracks taken from the second infantry barracks should be re-occupied. The followers of the 21st Hussars, being without houses or huts, live anyhow and anywhere in the lines, and must be a source of danger to the troops. Accommodation should be erected as soon as practicable. Want of accommodation for dhooly bearers is very much felt. The General Officer Commanding, Secunderabad District, reports that the construction of new huts cannot be undertaken at present as the scarcity of water prevents building. The construction of huts for dhooly bearers in the vicinity of Quarter Guard is under consideration. The water supply is obtained from a deep well, situated in an isolated position a quarter of a mile from buildings in the hollow of an undulating ground; from this well, pipes are laid to reservoirs, into which water is pumped, and from thence it is conveyed by iron pipes to barracks and hospitals. The water is of good quality, and is never exhausted. Dry cultivation is carried on extensively in the vicinity of the station. Within cantonment are patches of wet cultivation, wherever water is collected. Toddy topes are everywhere to be found. Many kinds of English vegetables grow, and with the aid of the commissariat garden, the troops are fairly well supplied with a variety of English and country vegetables. Potatoes are supplied from Bangalore and Poona; cabbages, tomatoes, lettuce, &c., &c., from the commissariat garden; and pumpkins, sweet potatoes, onions, and spinach, are grown locally. There are three hospitals for the sick of the infantry, cavalry, and artillery, viz., south, central and

North. The south is a large two-storied building with sufficient bath accommodation. There are no appropriate offices, medical stores, library, or rooms for special orderlies. It has unsuitable out-buildings, and no dining hall. The central and north hospitals have ample accommodation.

Madras.

Madras District.—The health of the troops in this district has been good, and the sanitation of barracks and hospitals has been satisfactory. At Madras the troops are located in Fort St. George. The fort is surrounded by a moat, the water in which is never changed. Although the water is stagnated it is noteworthy that no disease can be directly traced to insanitary causes. The question of stirring up the *débris* in the moat, a necessary step if it be drained, is one which calls for the most mature consideration. The Cooum river, which runs through the suburbs of Madras, takes a serpentine course, reaching the sea about half a mile below the fort. It may be looked upon almost as a main sewer, receiving every kind of drainage. During the hot season, when water gets low and the banks dry, the stench is abominable. The scheme of the sanitary expert, who sojourned here last year, for remedying the objectionable state complained of has not yet been promulgated. The King's barracks is a large two storied building. The basement rooms are brick floored. These rooms are objectionable owing to the excessive dust in dry season, and to obstruction to free perflation of air owing to proximity of other buildings. The married quarters consist of four blocks; they are unsatisfactory owing to the distance from cook-houses, the want of bath accommodation in the infantry portion, and water not being laid on. As to rations, the meat is very poor, mutton so bad that the men prefer beef. No English vegetables are supplied, and there has been very little variety in the country vegetables. New latrines have been constructed during the year; they are suitable. That for the infantry is rather far from barracks, that for the artillery is not large enough, and the seats are fixed, thus rendering their perfect cleanliness difficult. Urinaries exist only for the infantry. The artillery have receptacles placed in an old disused latrine; it is close and ill-ventilated with no privacy. There is a native bazaar in the fort, but it seems quite unnecessary as there is a good canteen and coffee shop. The hospital is half a mile from the Fort and opposite the Central Railway Station. It is situated too close to the main road and the river Cooum, which runs to the south and east. Its situation is not healthy, and its proximity to the road during the dry season exposes it to clouds of red dust, making everything dirty and untidy. There is ample accommodation, but it is badly and inconveniently arranged. The cook-house is inconveniently situated, and is small, dark, and unsatisfactory. The great requirements are:—1. Accommodation for insanes and eye and isolation cases. 2. Quarters for medical warrant officers, Army Hospital Native Corps, and storekeeper. 3. A laundry. 4. A more conveniently situated and larger cook-house. At St. Thomas' Mount the old or north and south barracks are not used. The barracks occupied by the Royal Artillery are situated a short distance to the south-west of the mount. The drainage is almost entirely surface, and not perfect; a new system for the cantonment is under consideration. The present drains seem to have sunk in some places, while in others there is a great tendency to silt up from surface washing. The station hospital is a large double-storied building, having accommodation for 50 patients. Within the hospital compound is a building consisting of two wards, which is used as a contagious ward. The hospital for women and children is a separate building enclosed, with its out-offices, by a low wall. The accommodation is ample. Poonamallee Barracks consist of four detached single-storied blocks running in two parallel lines from east to west. The ventilation is quite satisfactory, and effected by numerous doors and windows and ridge ventilation. As to drainage, the soiled water from the lavatories at the eastern extremities of both blocks of barracks, as well as the water from the plunge bath, is allowed to flow together with the surface drainage from the surrounding parts into a large tank lying 50 yards east of the barracks. This is objectionable, as the whole of the water in the tank is thereby fouled. The quality of the rations has been fair. There is a difficulty about obtaining a variety of vegetables. The hospital is a very fine two-storied building. There are two large and one

Madras.

small ward in each storey. Open verandahs surround the wards. The accommodation is ample and ventilation excellent. No contagious disease ward exist at present, the old one having been pulled down. The drinking water is obtained from a well south of the hospital. It is of usable quality, and the quantity has been sufficient. At Pallaveram the detachment of British troops when on musketry duty occupy barracks Nos. I., II., and III., formerly used as native places of arms, and two small hospital blocks situated to the northern and more open side of the cantonment. The arrangements for perflation and ventilation are good.

Rangoon District.—The general health of the troops in this district has been very good. The sanitation of the barracks, hospitals, and outbuildings has been satisfactory. The Rangoon cantonment is situated about a mile and half north of the town. It is provided with good broad roads, and is well supplied with surface drains. The infantry barracks consist of 8 teakwood blocks arranged in two rows and elevated about 11 feet from the surface of the ground. They afford ample accommodation. The Royal Artillery barracks are much older than the infantry barracks. The water supply is obtained from 4 wells, which are about 30 feet deep. The quality is good. The station hospital consists of 4 blocks, part of one being set apart for the treatment of sick officers and as a duty room for the lady nurses. A large private bungalow has been used as a female hospital, and in its immediate vicinity a site has been selected for the erection of suitable quarters for four lady nurses. Toungoo.—The cantonment is on the west bank of the river. The barracks consist of 16 bungalows built of wood. Ventilation is effected by means of ridge, eave, and floor, also by doors and windows. This station was abandoned by British troops on the 25th of December 1892.

Meiktila Barracks consist of 8 wooden blocks all built alike and arranged *en échelon.* The ventilation is good. The water supply is from a large lake. It is open to pollution from the surface drainage, especially from the village, but the water is good. The station hospital is a two-storied wooden building with a verandah all round. There is no dining or reading room for patients "allowed up," and no provision has been made for prisoners, lunatics, sick officers, or women and children. Money was sanctioned by Government for another building of the same size as the present one, as it is much needed for the accommodation of the sick, but the work has not been carried out. The native attendants are located in a temporary bamboo hut; a permanent building was promised and sanctioned, but the money to erect it is not forthcoming.

At Fort Blair the island is well planted with ordinary tropical trees and bushes, and the barrack is well exposed to the breezes of both monsoons. The ventilation is good, and the accommodation is ample. The drinking water is obtained from two wells cut into the limestone and bricked.

Myingyan and Mandalay Districts.—The general health of the troops in these districts has been good, and the sanitation of barracks and out-buildings have been well attended to. At Mandalay the cantonment is well wooded and unoccupied ground kept as a grass farm. The surface drainage has been improved during the past year, and the main channel where it runs through barracks is lined with masonry, but water still lies for several days after heavy rain, and on two occasions during the year the Fort was partly under water as the culverts under the moat were not large enough to carry off the rainfall. Measures to improve this condition of things are under consideration. The barracks of the Mountain Battery were not built for Europeans, and are very hot in the hot weather. Bath rooms and lavatories are provided at a convenient distance. A covered plunge bath has been built during the past year. The water from the moat has been used for all purposes, the supply is ample, and analysis showed it to be pure. The hospital consists of three buildings arranged in a row, and connected by covered ways. The ground floor of one block which is paved and enclosed has been used as a ward for venereal cases. At Thayetmyo the private bungalows in cantonment for the accommodation of officers are in a most dilapidated, insanitary condition. The matter was reported to the officer commanding the district, and steps are being taken by the cantonment committee to compel the landlords to make them habitable.

Madras.

Quarters should be built for officers in this station. The barracks are constructed on piles with double shingle roof and verandahs on either side. They are all well ventilated by doors, windows, open skirtings, and double ridges. The accommodation is ample. The latrines are situated outside the bungalows, and are worked on the "dry-earth" system. The number of sweepers allowed by regulations is not sufficient, the result being that "smells" are more frequent then they should be. The matter has been reported to the officer commanding. A mortuary, a cart shed, quarters for Army Hospital Native Corps, a purveyor's store-room, and quarters for dhooly bearers have been erected recently. At Bhamo the European quarters in Fort C are the usual teak wood buildings. The ventilation is good, and accommodation ample. The water is obtained from wells sunk in the fort. The supply is ample and of good quality. With regard to rations the oxen for the supply of beef come from Mandalay; the meat is, as a rule, tough and free from fat; but the mutton supplied is of good quality. There is a commissariat garden for the growth of English vegetables, but the supply is at present limited. The men of the Army Hospital Native Corps are quartered in a temporary bamboo mat hut situated a short distance away from the fort. A permanent building inside the fort for these attendents is required. At Myingyan since last report the barrack accommodation has been extended; there are now seven barracks, and other of about the same proportions used as recreation room, library, temperance room, &c. The barracks are kept dry by surface drains. The garrison cells which were considered unfit for habitation in last report have had improvements made. The water supply is obtained by carts and water carriers from the Irrawaddy; the quality is good. When the river is low the water is brought from amid stream. This station was abandoned by British troops on the 30th November 1892. Shwebo barracks consist of eight buildings, each capable of accommodating 50 men and two sergeants. Each building is constructed of teak wood, and consists of a ground floor of kunkur; above this is the barrack room supported on wooden uprights. The accommodation for officers is not sufficient. Quarters for medical officers were built during the year, but were handed over to the officer commanding, who occupied them. A double unit utterly unsuitable, in the British infantry lines, serves as medical officers' quarters at present. Water for drinking purposes is obtained from two wells in the British infantry lines. Only one of them contains fair water, and it has been recommended that it should be reserved for the British infantry. Filter beds are in course of construction near each cook-house. It is proposed to convey the water to them from the reservoir by means of force pumps and pipes. The hospital accommodation has been insufficient; a second building to accommodate 30 patients with latrines, bath rooms, surgery, &c. commenced during the year is now almost completed, and when taken over the accommodation will be ample. The female hospital which had been misappropriated as a sergeants' mess was given back in December 1892. In Bernardmyo Barracks there are seven bungalows, five being made of wood raised on piles. A new one has been constructed for the mounted infantry. All the wooden bungalows have a layer of thatch or matting fixed underneath the floors with the object of keeping out the ground air. In all the bungalows there is an open space between the walls and the roof for the purpose of ventilation; this is an unsuitable arrangement for such a climate, where the atmosphere at night is nearly always cold and damp. The mounted infantry bungalows are situated in the lowest part of the cantonment, quite close to a swamp. The others are on the highest ground available, but close to a ravine. The men's quarters are altogether unsuitable to the climate. The water supply is obtained from a small mountain stream close to the officers' quarters. It never runs dry and is very clear, except during the rains, when it is muddy. It is always filtered in McNamara's filters, of which, however, there is as yet not a sufficient number. The hospital is a wooden building raised a few feet on piles, with thatched roof and floor covered with tarpaulin to keep out the ground air. The medical officer in charge remarks as follows:—"In attempting to form an estimate of the influence of the "climate of Bernardmyo on health, the following difficulties present them-"selves:—

"1. Detachments being generally relieved every year, it is impossible to tell whether, should men stay for a longer time, they may not finally get rid of

Madras.

the malarial fever from which they usually suffer up to the end of the first year.

"2. The difficulty of eliminating the influence of the march through the malarious terai which intervenes between Bernardmyo and the Irrawaddy. Experience has proved that scarcely anybody can do this journey during the rains without suffering from fever, sometimes so severely that death may follow. The fact that there is in February a marked diminution in the number of admissions, followed afterwards by an increase just at the time that fevers prevail most in malarious countries, coupled with a simultaneous increase in the number of admissions for the allied disease rheumatism, shows that there must be a malarious influence at work in the station itself.

"3. The existence of a swamp in close proximity to the barracks must have a considerable share in the causation of the two prevalent climatic diseases.

"4. The barrack rooms, being extremely cold and draughty, affording inadequate protection from the night air, another element is thus introduced which must help to increase the unhealthiness of the station.

"If we take the most favourable view of the case for Bernardmyo, and assume that nearly all the fever which prevails there is the result of the journey up, the fact that the men have again to be exposed to the same injurious influence before they can get away from it, is quite enough of itself to render it necessary to discuss the question whether it would make a good sanitarium."

With a view to improving the health of the station, the following recommendations might be suggested:—

"1. The drainage of the swamp at the foot of the cantonment.

"2. The construction of barracks suited to a cold climate.

"3. That reliefs should not be carried out before February or March, when the temperature at night is not so low as in December and January.

"4. That men coming up should have their warm clothing (blankets) issued in Mandalay."

III.—Bombay.

Bombay.

The average strength of warrant officers, non-commissioned officers, and men during the year was 12,702, being almost the same as the strength in the preceding year. The most important of the statistics of sickness and mortality are shown in the following table:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Average constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally discharged.	Constantly Sick.
12,702	20,252	164	15	179	271	149	951·59	1594·4	14·09	21·34	11·73	74·92

Compared with corresponding results in the previous year an increase of 187·3 is seen in the ratio for admission, and one of 1·32 in the constantly sick rate, whilst a decrease of ·69 occurs in the death rate. As compared with the average rate for the previous ten years there is an increase of 208·0 and 5·56 in the admission and constantly sick rates, but a decrease of ·66 in that of mortality. The average sick time to each soldier was 27·42 days, a very slight increase over the previous year, but longer by 2·10 days than that for the previous decennium.

The average duration of each case of sickness was 17·20 days, a slight decrease below both the previous year and the decennium.

The loss to the Command by death and invaliding was 435 men, and the loss to the service from deaths and invalids finally discharged was 328, or a rate of 25·82 per 1,000 of strength, being lower by 4·13 than in the previous year.

In Abstract XXX. will be found a table showing the prevalence of sickness and mortality in the different administrative districts of the Command.

The highest admission ratio in any district was in Bombay, 2003·2, then in Sind 1769·4, next came Nagpur with 1767·7, Mhow 1607·0, and Poona 1128·7. The last-named district also furnished the lowest rate in 1891, when the highest was in Nagpur. As compared with the previous year an increase of 376·8, 310·7, and 280·9 has occurred in the Bombay, Mhow, and Sind districts respectively, whilst decrease is observed in Nagpur, equal to 131·9 per 1,000.

Mortality was highest in the Sind district, being 20·72 per 1,000; next came Poona, 15·56, Bombay 11·40, Mhow 9·00, and Nagpur 7·53. There was an increase over the previous year's rates in Sind, Poona, and Bombay, but a marked decrease in Mhow and Nagpur.

In the Sanitaria, the admission rate, 1540·5 per 1,000, shows an increase of 219·5, and the death rate 15·01, a decrease of 24·76.

In Abstract XXXI. is a table showing the admissions, deaths, and ratios per 1,000 at the principal stations in the Command. Excluding stations with an average annual strength of under 100 men, the highest admission rate at any station was at Ahmedabad, 2649·0. This is an increase over previous year of 730·2, and over the ten years' rate of 873·0. The year was unusually sickly, and influenza and malarial fevers were very prevalent. The next highest rate was 2430·9 at Aden, an increase over the previous year of 320·1, and over the decennial average rate by 1174·7. The health of this station seems steadily deteriorating, being due to the prevalence of ague. No satisfactory reason for this is obtainable. The third highest was 1913·1 at Neemuch, being higher than the previous year by 777·4, and than the

Bombay.

average for the previous decennium by 374·8. The increase was also due to excessive prevalence of fever, owing to an exceptionally hot season, followed by a heavy and prolonged monsoon.

The lowest admission rate at any station was 932·9, at Ahmednagar, being a decrease below previous year of 263·3, and below previous decennium by 599·2. This was due to a marked decrease in venereal disease and simple continued fever. The next lowest rate was 1068·8, at Kirkee, being 163·1 above the previous year, but 38·9 below the previous decennium. There was a diminution in the amount of venereal disease. The third lowest was Poona, 1156·9, a decrease of 95·8 below the previous year, but an increase of 42·1 over the previous decennium. Though the year was very unhealthy from enteric and malarial fevers, yet the admission rate was low owing to the marked diminution of the admissions for venereal disease.

As regards the rates of mortality, the highest was 24·88, at Hyderabad, an increase over previous year of 17·87, and previous decennium of 16·50. There were 2 deaths from cholera and 2 from enteric fever, but the other cases were not due to any special outbreak of disease. The next highest was at Kirkee, being 21·74 per 1,000, an increase over the previous year of 16·90, and over the previous decennium by 16·04. There were 9 deaths from enteric fever. The third highest rate was at Ahmedabad 20·41, a decrease below previous year of 5·23, but 6·11 above the previous decennium. The lowest mortality rates (next to Indore, where no deaths occurred) were at Satara, 5·05 against *nil* in previous year; Mhow next with 5·69, a decrease below previous year of 3·38, and Aden next with 7·73, as against 10·96 in previous year.

In Abstract XLIII. is a table showing the sickness and mortality in the different arms of the service and regiments serving in the Command.

In the following table the influence of age on sickness, mortality, and invaliding among the troops in the Command is shown as far as possible :—

Ages.	Average Strength.	Admissions.	Deaths.	Invalided.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years - -	434	415	2	8	956·2	4·61	18·43
From 20 to 24 years -	5,035	10,699	89	112	2124·9	17·68	22·24
„ 25 „ 29 „ -	4,982	7,866	59	101	1578·9	11·84	20·27
„ 30 „ 34 „ -	1,040	974	6	29	936·5	5·77	27·88
„ 35 „ 39 „ -	345	215	8	21	623·2	23·19	60·87
„ 40 years and upwards	72	77	—	4	1069·4	—	55·55
Not stated - -	794	6	—	—	—	—	—
Total - -	12,702	20,252	164	*275	1594·4	12·91	21·64

* Inclusive of 4 invalids who did not embark at Karachi.

It will be seen that the highest rates occurred in men between 20 and 25 years of age, and then in those between 25 and 30 years. Compared with the previous year the rates are higher for these periods of age, though lower in those under 20 years of age and between 35 and 40.

As regards mortality, the ratio was low in men under 20 years of age, being only 4·61 as against 20·10 in previous year. It was highest in those between 35 and 40 years, and next in those between 20 and 25 years of age. The general death rate is lower than in the previous year.

Bombay.

In the next table will be found calculations to show, as far as possible, the influence of length of service in the country on the sickness and mortality among the troops during the year.

Years of Service.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year - -	1,560	3,395	47	33	2176·3	30·13	21·15
From 1 to 2 years -	1,538	2,473	25	53	1607·9	16·25	34·46
" 2 " 3 " -	1,717	2,395	18	32	1394·9	10·48	18·64
" 3 " 4 " -	1,754	2,788	19	30	1589·5	10·83	17·10
" 4 " 5 " -	1,715	2,577	16	36	1502·6	9·33	20·99
" 5 " 10 " -	3,234	6,248	33	75	1932·0	10·20	23·19
" 10 upwards -	390	370	6	15	948·7	15·38	38·46
Not stated - -	794	6	—	1	—	—	—
Total - -	12,702	20,252	164	*275	1594·4	12·91	21·64

* Inclusive of 4 invalids who did not embark at Karachi.

The admission ratio among men under one year's service was very high, being 2176·3; it fell considerably in the next year of service, but again increased in those from 5 to 10 years' service. The rates were generally higher than in the previous year.

As regards mortality, the highest rate was in those under one year's service, next in those in their second year, and lowest in those in their fifth year of service. There is no very marked difference between these rates generally and those of the previous year.

In Abstract XXIX. will be found the admissions, deaths, invaliding, &c., in the different groups and orders of diseases, and in Abstract XXX. the relative prevalence of sickness and mortality in each of the administrative districts.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Small-pox* caused 7 admissions and 2 deaths, being in the ratios of ·5 and ·16, as compared with ·1 and *nil* respectively in 1891. All the cases occurred in the Mhow district. *Other Eruptive Fevers* furnished 4 admissions, causing an admission rate of ·3 as compared with ·1 in the previous year. The cases were, measles 3, and chicken-pox 1. *Enteric Fever* caused 222 admissions and 64 deaths. The admission rate, 17·4, shows an increase of 1·4, but the death-rate, 5·04, a decrease of ·54 as compared with corresponding ratios for 1891. With the exception of that of Mhow, there has been an increase in the admission rate in all the districts. In Abstract XXXII. will be found a table giving the stations at which the admissions and deaths from enteric fever took place, in each quarter of the year. With regard to different stations, Mhow, Nasirabad, Neemuch, and Ahmednagar show a satisfactory decrease in the numbers admitted from enteric fever, but at almost every other station there has been an increase compared with 1891, markedly so at Poona, Kirkee, Kamptee, Karachi, and Hyderabad. A few remarks on the disease at different stations are now added.

Poona.—From an annual strength of 1,969, there were 61 admissions and 18 deaths, a ratio per 1,000 of 31·0 and 9·14 respectively. This compares unfavourably with 1891, when the ratio of admission was 19·2, and of deaths 6·90. It is probable that some mild cases of the disease were returned as simple continued fever, and a man admitted at Purandhar doubtless contracted the disease before leaving Poona. The type of disease was severe. As will be seen from the table, the disease was most prevalent during the

Bombay.

rains, though 15 of the cases occurred in February and March. In 1891 the admissions were more evenly distributed throughout the year. From Wanowrie there were 34 cases with 12 deaths admitted from 14 different barracks. There were two outbreaks, one in February and the other in the rains, when there were 12 in July, 6 in August, and 3 cases in September. Seven cases with two deaths occurred at the military prison, Wanowrie, between July 12th and August 31st, the average strength during the period being 52. The cases were all admitted from different cells. The prison is situated on high ground and well isolated, and it is unnecessary to say that the communication with the outside population is almost *nil*. The first case was detected on the 12th July, and other cases followed on the 13th, 16th, 18th, and 21st. After that date there was no fresh admission for a month, and the last case followed 10 days later. The disease was of a severe type. Though 12 cases were admitted in July from the Wanowrie barracks, the disease never, as in the prison, assumed an epidemic form (5 admissions from 60 men in 10 days), and no women or children were attacked. As the water supply was the same for the prison as for the garrison, it cannot be admitted as an exciting cause, and the milk was the same as that supplied from the Government dairy to the hospitals at Poona and Kirkee. The sanitary arrangements, with the exception hereafter mentioned, were very good. The Principal Medical Officer of the district remarks, regarding the outbreak, "The sanitary arrangements were good with the exception of those " for the disposal of excreta. Third class prisoners (the majority), and all " those attacked were third class, are not allowed to go to the latrine, but are " provided with chamber pots with covers, which, after being used, are " supposed to be pushed outside the cell through an aperture made for the " purpose in the wall, and to be removed and emptied by a man told " off for the purpose. I discovered at my inspection that this was not " done, and that the pots, after being used, were kept in the cells and " emptied by the prisoners themselves into an iron receptacle at stated hours. " I found the majority of the chamber pots unemptied, both in the cells and " hospital cells, and some pots that had been emptied had not been cleaned, " and had fæces still adherent to them, although brought back and replaced " in the cells. No dry earth was used to disinfect the receptacle into which " each man had to empty his pot several times a day. I reported this to " the General Officer Commanding the District, and strict orders were issued " on the subject, and the chamber pots were regularly removed by a man told " off for the purpose. The first case had been 33 days in prison before " admission, and I consider it quite possible that this man may have " contracted the disease prior to admission to the prison. The period of " incubation of enteric fever is very prolonged, and the disease in the early " stage is most insidious, and many cases do not apply for treatment until " the disease is advanced and frequently suffer from diarrhœa. There is no " doubt that enteric fever is spread by the intestinal discharge of patients " suffering from the disease, and I advance as the only explanation that " the enteric fever in the prison was spread from the man first admitted, or by " some other man who suffered from a mild attack of enteric fever, for which " he never came under treatment. The sanitary defects above alluded to " would afford every facility for men to become infected when emptying " chamber pots, many of which had been soiled for hours, into the receptacle which was not disinfected in any way, and which, at the time of " my inspection, was most offensive. I would further remark that if the " epidemic in the prison was due to Karakwasla water, it ought to have " prevailed as such wherever the water was used, but this was not the case, " and no woman or child belonging to the garrison suffered from enteric " fever during the year." 16 cases with 4 deaths occurred at Ghorpuri. They were admitted from 12 barracks, and were distributed over eight months of the year—January, May, October and November, giving no cases. A case also occurred at the Rest Camp at Ghorpuri. A case was also admitted on 31st January from the camp of instruction held a few miles ftom Poona. The disease in this case was, in the opinion of the Principal Medical Officer, probably contracted in camp from drinking bad water, and the 9 cases admitted in February from Wanowrie were due to the same cause. As they all occurred in the Worcestershire Regiment to which the man admitted from camp belonged, the greatest care was taken as to the drinking water in camp, but orders are not always obeyed. The Lancashire Fusiliers from the same camp had two cases in February. There were two cases admitted into the station hospital, Poona, on January 12th and 13th, in men who had landed at Bombay from the troopship *Crocodile* on the 8th January. As they stated that they had felt ill for some days before disembarkation, there is little doubt that the disease was contracted prior to arrival in India, and probably on board ship.

Bombay.

Kirkee.—There were 24 admissions and 9 deaths from enteric fever, and it is probable that a good many of the cases shown as simple continued fever were also mild cases of the disease. These numbers compare unfavourably with 1891, when there were 14 admissions and 3 deaths. No less than 15 of the 24 admissions were from the 36th Field Battery, Royal Artillery, which occupied Nos. 3 and 4 Barracks, No. 3 Barrack giving 7 admissions and No. 4 Barrack 8 admissions. It was from these two barracks that the majority of the cases returned as simple continued fever came. The Principal Medical Officer of the district remarks: "I repeatedly inspected those barracks and "their surroundings, and could find no sanitary defect. The latrines were "always in excellent order, and the men lived under the same conditions as "the other troops in the station, but I believe there were a large number of "young men recently arrived in India in the Battery." The disease, as in Poona, chiefly prevailed in the rains, 16 of the cases occurring in July, August, and September. It is noteworthy that this is the reverse of Ahmednagar, where 14 out of 17 cases occurred before June.

Ahmednagar.—Enteric fever caused 17 admissions and 5 deaths, against 21 admissions and 5 deaths in 1891. The majority of the cases occurred before the rains. The disease was not confined to any particular barrack, and no cause could be traced in the barracks or their surroundings, to the water, or to the milk.

Mhow.—Twenty-two cases were admitted, of which 3 terminated fatally. This compares favourably with 1891, when there were 38 admissions and 10 deaths; 13 of the cases came from the 7th Hussars and 9 from one troop, the large majority being young men. The disease was most prevalent in April and May; only two cases occurred between October and April.

Nasirabad.—There were 14 cases and 7 deaths from enteric fever. This compares favourably with the previous year, when there were 37 admissions and 10 deaths. The cases were distributed throughout the year. 12 were from various barracks occupied by the detachment of the Gloucestershire Regiment, only one man of the Royal Artillery being attacked. The disease was of a severe type. The Medical Officer remarks: "In looking at "the months noted, it will be seen that from February to September only two "cases occurred. In 1891 nine cases occurred during that period, and I can"not help connecting the closing of the Sudder Bazaar, which was done "owing to small-pox and cholera having broken out there during the period "mentioned, with the exemption of the troops from enteric fever. All the "elements leading to an increase of the disease were present, as scanty rainfall "(and consequently) a scanty water supply, poor milk and indifferent food, "yet we were practically free."

Neemuch.—Four cases only were admitted, all of which recovered, but one man admitted at the end of 1891 died. No sanitary defects could be detected.

Taragarh.—Four cases were admitted in September and October, two of which undoubtedly were contracted at Nasirabad. Another case under treatment transferred to Nasirabad on the closing of the sanitarium was not diagnosed as enteric fever till arrival there. *Colaba.*—Five cases were admitted, of which 2 terminated fatally. At least three were undoubtedly contracted elsewhere. *Deolali.*—Eight cases, none of which terminated fatally, were admitted; 5 were undoubtedly contracted elsewhere. In 1891 there were 4 cases and 2 deaths. *Deesa.*—There were 6 admissions with 2 deaths, against 3 admissions and no death in 1891. *Ahmedabad.*—There were 7 admissions and 3 deaths from enteric fever, against 6 admissions and 1 death in 1891. The cases were distributed throughout the year, and occurred in different parts of the barracks. No insanitary cause could be detected. *Mount Abu.*—There were 2 admissions and 1 death from enteric fever in August and September.

Bombay.

The cause could not be traced, but it is presumed that one of the men attacked, who was fond of wandering in the jungle, may have drunk impure water. *Karachi.*—Enteric fever caused 25 admissions, against 5 in 1891 and 20 in 1890. Most of the cases were of a virulent type, and the recovery of many of them was "a surprise to all." Only 4 deaths, however, occurred. All the cases were under 27 years of age; 15 admissions took place in September, the others were distributed throughout the year. *Hyderabad.*—There were 7 admissions, with 2 deaths from enteric fever, against none in 1891. *Kamptee.*—11 cases of enteric fever with 3 deaths were admitted during the year. This shows an increase over the previous year, when there were 6 admissions and 4 deaths. The cases were not confined to any particular season of the year, and were admitted from different barracks. No defect of barracks, water, milk, or food supply could be traced.

Other continued fevers caused 1,091 admissions and 1 death. The admission rate, 85·9, exceeds that of the previous year by 26·0, but the death-rate, ·08, is the same. With the exception of the Nagpur District, where there was a considerable decrease of 131·1 in the admission rate (the rate for the year having been only 17·1), there was an increase in all the districts as follows:—Bombay, Deesa and Aden 54·7, Poona 16·5, Mhow 6·6, and Sind 125·7.

Cholera furnished 16 admissions and 12 deaths, as compared with 53 and 33 respectively in the previous year. The admission rate, 1·2, and the death-rate, ·94, are lower by 3·0 and 1·65 respectively than the corresponding ratios for 1891.

In Abstract XXXIII. will be found a table showing the stations at which admissions and deaths from cholera took place in each quarter of the year.

The cases occurred in the months of June, July and August, and eight of them in Sind, where the disease was very prevalent among the civil population from June to September. There were 6 cases with 3 deaths at Karachi, and 2 cases, both fatal, at Hyderabad. Diarrhœa was very prevalent at Karachi at the same time, but not at Hyderabad. The Medical Officer is of opinion that the small number of cases at Karachi was due to the excellent water supply, for though cholera was all round not a single officer or wealthy civilian was attacked; one woman was attacked and died. At Kirkee there were 3 cases, 2 of which proved fatal. Cholera existed in the bazaar at Poona, but none at Kirkee. No connection with previous cases could be traced, with regard to the first man attacked; the second and third occurred in patients in hospital, and might be said to be connected with the first case as there were no others before or after. At Ahmednagar there were 4 cases, all fatal. Cholera was prevalent in the city, and there is a possible connection in the first case with a previous one, a native living about 250 yards from the man's quarters. No connection could be traced in the other cases. One case occurred at Deolali, which proved fatal. Cholera existed in the neighbourhood.

Dysentery furnished 239 admissions and 4 deaths, including 3 of invalids after leaving the Command. Both the admission rate, 18·8, and the death-rate, ·31, are less than those for the preceding year by 6·4 and ·16 respectively. This disease presented a decrease in the admission and death rates in all the districts, excepting the Sind District, where there was an increase of ·7 in the former. The most considerable decrease is noticed in the Mhow District, where the admission rate fell from 30·8 in 1891 to 17·0 in the year under report. Then follows the Poona District, where there was a decrease of 7·3, the admission rate for the year having been 18·2. In the Bombay, Deesa and Aden District the admission rate was 18·7, as compared with 23·2 in the previous year. In Abstract XXXIV. is a table showing the prevalence of dysentery, diarrhœa, hepatitis, and abscess of liver in each of the districts during the year, and in Abstract XXXV. a table showing the prevalence and mortality due to these diseases in each quarter of the year.

Other Diseases of the 1st Sub-Group—For these diseases 93 admissions and 1 death are recorded; the majority of the cases were of influenza. The admission rate, 7·3, exceeds that of the previous year by 4·7, but the death-rate, ·08 is just the same. Influenza prevailed in an epidemic form at Kamptee, the admission rate for the Nagpur district having amounted to 54·8 as compared with *nil* in the preceding year. The Poona, Mhow, and Sind districts show an increase of 3·0, 5·7, and ·7 respectively. In the Bombay, Deesa, and Aden district there was a decrease of 6·2. *Bombay.*

Malarial Fevers.—These caused 6,791 admissions and 4 deaths. The admission rate, 534·7, exceeds that of the previous year by 170·2, and the death-rate, ·31, is almost double that of 1891. The greatest increase is noticed in the Bombay, Deesa, and Aden district, where the admission rate rose from 437·6 to 750·4, thus causing an increase of 312·8. The death-rate, ·88 also exceeds by ·57. The Nagpur district, however, caused a considerable decrease of 194·0, the admission rate for the year having been 514·0. The death-rate was 1·07 as compared with *nil* in 1891. In the Mhow, Poona, and Sind districts there was an increase of 285·1, 89·3 and 51·8 in the admission rate respectively.

Septic Diseases furnished 13 admissions and 2 deaths, including that of an invalid. The cases were erysipelas 11, septicæmia 1, and sloughing phagedæna 1. Both the admission rate, 1·0, and the death-rate, ·16, show an increase over the ratios for the preceding year.

Venereal Diseases.—The admissions for *primary syphilis* numbered 1,414, equal to a ratio of 111·3 per 1,000, which is lower than the corresponding ratio in the previous year by 36·7, and than the average rate of the preceding six years by 24·3. The ratio constantly sick from this affection was 8·22 per 1,000, lower in both the above comparisons by 3·42 and 2·37 respectively. Including the sickness from simple venereal ulcer, admissions 515, and constantly sick 31·99, the ratio of admission for primary venereal sores was 151·8, and the constantly sick rate 10·74 per 1,000. Compared with corresponding rates in the previous year, there is a decline of 26·8 in the admission rate and one of 2·89 in the constantly sick rate, and compared with the sexennial average, these rates are lower by 20·1 and 2·08 respectively. *Secondary syphilis* was the cause of 640 admissions and one death, the admission ratio, 50·4 per 1,000, being lower than in 1891 by 1·9, but above the sexennial average by 7·2. The constantly sick rate, 3·81, is also lower than in the preceding year by ·62, but above the average rate by ·04. *Gonorrhœa,* with 2,031 admissions, gave a ratio of 159·9 per 1,000, which is above the rate in the previous year by 5·6, but below the average rate by 6·6. The constantly sick rate, 10·77 per 1,000, is lower in both these comparisons by ·16 and ·58 respectively. Including all forms of venereal disease, the total admission ratio amounted to 362·1, a decrease of 23·1 from the corresponding rate in the preceding year, and of 19·6 from the average rate of the preceding sexennium; the total ratio of constant inefficiency on account of venereal affections being 25·32 per 1,000, lower than in 1891 by 3·68, and than the average of the preceding six years by 2·62.

In Abstract XXX. is a table showing the prevalence of venereal diseases, except simple venereal ulcer, in the different districts of the Command. The highest ratio of prevalence for primary syphilis was 142·4 per 1,000 in the Sind district, the next, 139·8 in the Poona district, followed by 126·9 in the Nagpur district, 118·6 in the Bombay district, and 49·0 in the Mhow district. In the previous year the highest ratio was in the Poona district, and amounted to 215·8 per 1,000, the lowest being, as in the year under report, in the Mhow district. For secondary syphilis the Nagpur district gave the highest admission rate, 109·7 per 1,000, and the Sind district the lowest, 26·1. The intervening ratios were 63·7, 46·2, and 35·3 per 1,000 in the Bombay, Poona, and Mhow districts respectively. In 1891 the highest rate of admission occurred in the Bombay district, and the lowest in the Mhow district. The greatest prevalence of gonorrhœa was in the Nagpur district, 231·2 per 1,000, being the admission rate; the Mhow district came next with 185·0, followed by the Bombay, Poona, and Sind districts, with 169·2, 150·6, and 74·2 respectively. In the previous year the highest and lowest ratios were in the same districts as in the year under report. Taking syphilis and gonorrhœa together, the highest ratio of prevalence was 467·8 per 1,000 in the Nagpur district, followed by 351·5 in the Bombay district, 336·6 in the Poona district, 269·3 in the Mhow district, and 242·7 in the Sind district. In the preceding year the highest and lowest ratios were in the Poona and Mhow districts respectively. Comparing the ratios in the year under report with those for the previous

Bombay.

year an increase of 53·7 per 1,000 is observed in the rate for the Nagpur district, and one of 34·6 in that for the Mhow district; in the remaining districts the ratios have declined, the decrease being equal to 102·0 in the Poona district, 54·1 in the Sind district, and 33·6 in the Bombay district.

Parasitic Diseases caused 58 admissions and 1 death. The death was due to echinococcus hominis. The admission rate was 4·6 and the death-rate ·08 as compared with 3·5 and *nil* respectively in the previous year. Compared with the previous year, a decrease of 1·5 occurred in the admission rate in the Poona district, whilst increase occurred in the other districts as follows:—Bombay, Deesa, and Aden 1·5, Mhow ·3, Nagpur ·1, and Sind 8·1.

Scurvy furnished 10 admissions as compared with 7 in the previous year. The admission rate was ·8 as compared with ·5. In the Bombay, Deesa, and Aden district there was a decrease of ·3, the rate for the year having been ·9. In the Mhow, Nagpur, and Sind districts, however, there was an increase of ·3, 1·1 and 1·4 respectively.

Alcoholism caused 34 admissions and 1 death. Of these 3 cases were of delirium tremens. The admission rate 2·7 presents a decrease of 3·0, but the death-rate was ·08 as compared with *nil* in the previous year. Compared with the corresponding results of the previous year, a decrease in the admission rate occurred in all the districts.

Debility furnished 549 admissions and 1 death, giving an admission rate of 43·2, and a death-rate of ·08, as compared with 36·2 and *nil* respectively in the preceding year. In Nagpur the admission rate declined by 8·2, but in all the other districts there was an increase as follows:—Mhow 16·3, Sind 15·2, Bombay, Deesa, and Aden 3·2, and Poona 2·9.

Rheumatism.—Under this head 333 admissions and 2 deaths are recorded. Both the admission rate, 26·2, and the death-rate, ·16, exceed the corresponding rates of the previous year by 2·5 and ·08 respectively. In the Bombay, Deesa, and Aden district the admission rate, 31·5, exceeds that of the previous year by 5·9. The Poona district had an admission rate of 15·8, which is almost the same as in the previous year, but the death-rate was ·26 as compared with *nil* in 1891. In the Mhow district the admission rate was 21·3 and the death-rate *nil* as compared with 31·5 and ·33 respectively. In the Nagpur district both the admission rate 66·7 and the death-rate 1·07 exceed that of the preceding year by 44·9 and 1·07 respectively. In the Sind district the admission rate was 26·1 as compared with 25·4 in 1891.

Tubercular Diseases caused 66 admissions and 15 deaths, including those of six invalids who had left the Command. The admission rate 5·2 per 1,000 is higher than that for the previous year by ·2, while the death-rate has increased by ·47. In the Bombay, Deesa, and Aden district there was a decrease of 3·5 in the admission rate and of ·35 in the death-rate, the rates for the year having been 7·6 and ·58 respectively. In the Poona district the admission rate, 2·6, and the death-rate, ·79, exceed the corresponding rates of the previous year by 1·0 and ·27. In the Mhow district there was a decrease of 3·4 in the admission rate and of ·33 in the death-rate. In the Nagpur district the admission rate 2·1 is double that of the previous year. The Sind district presented an increase of 12·1 in the admission rate and of 2·02 in the death-rate, the rates for the year having been 16·0 and 2·67 respectively.

Other Diseases, Group D.—For these diseases 157 admissions and 2 deaths are recorded, including that of an invalid. The deaths were both due to cancer. The admission rate, 12·3, presents a decrease of ·8, but the death-rate, ·16, is the same as in 1891. The cases were: Non-malignant new growths 111, scrofula 15, anæmia 25, &c.

LOCAL DISEASES.—*Diseases of the Nervous System* caused 131 admissions and 5 deaths, being in the ratios of 10·3 and ·39 per 1,000 respectively. The admission rate is lower than in 1891 by 2·3, and below the sexennial average rate by 3·6, while the death-rate is higher in both comparisons by ·08 and ·07 respectively. The greatest prevalence of nervous diseases in any district was in that of Bombay, the ratio being 16·4 per 1,000, the next rate was 14·1 in the Sind district, followed by 11·3 in the Mhow District, 7·5 in the Nagpur district, and 3·4 in the Poona district, the order of prevalence being the same as in the previous year; the ratios, however, are generally lower than in 1891, decrease having occurred in those of the Sind, Bombay, Poona, and Mhow districts equal to 5·4, 5·2, 1·8, and ·4 respectively, that for the Nagpur district being greater by 1·5 per 1,000. Among the admissions were 24 cases of mental disease, the ratio, 1·9 per 1,000, being below that in the previous year by 1·2, and less than the average rate for the preceding sexennium by 1·6. The remaining admissions comprised 65 of neuralgia, 13 of epilepsy, 13 of paralysis, 6 of inflammation of the brain or its membranes, &c. The deaths were 2 from cerebral inflammation, 1 from congestion of the brain, 1 from softening of the brain, and 1 from mania. *Bombay.*

Diseases of the Eye caused 150 admissions, equal to a rate of 11·8, less than that of 1891 by 1·9. Compared with the results of the previous year an increase of 3·3 occurred in the Mhow district, and of 8·5 in the Sind district. In the other districts there was a decrease as follows:—Bombay, Deesa, and Aden 7·6, Poona 3·3, and Nagpur 9·4.

Diseases of the Ear and Nose furnished 201 admissions. The admission rate, 15·8 per 1,000, is higher than that of the previous year by ·9. The Bombay, Deesa, and Aden district caused an admission rate of 20·4, which is higher by 6·5 than in 1891. The Poona district, with an admission rate of 6·8, shows a decrease of 1·0. In the Mhow district there was an increase of 3·0, the admission rate for the year having been 15·7. The Nagpur district caused an admission rate of 25·8, which is exactly the same as in the previous year. In the Sind district there was a decrease of 10·6, the rate for the year being 22·7.

Diseases of the Circulatory System.—For these affections 137 admissions and 4 deaths are recorded. The admission rate, 10·8, presents a decrease of 2·0, but the death rate, ·31, an increase of ·15. In the Bombay, Deesa, and Aden district there was a decrease both in the admission and death rates, of 4·6 and ·02 respectively. The Poona district gave an admission rate of 8·4, which exceeds that of 1891 by 1·4, and the death rate, ·53, contrasts with *nil*. In the Mhow district the admission rate, 9·3, is almost the same as in the previous year, and the death rate *nil* as compared with ·33 in 1891. In the Nagpur district there was a decrease of 14·2, the admission rate for the year being 8·6. In the Sind district there was a decrease of 1·4 in the admission rate, but an increase of ·67 in the death rate. Of the deaths 2 were due to valvular disease of the heart, 1 to fatty degeneration of the heart, and 1 to syncope.

Diseases of the Respiratory System.—These diseases furnished 343 admissions and 7 deaths, including that of an invalid, causing an admission rate of 27·0 and a death rate of ·55. Compared with the rates of the previous year the former shows a decrease of 3·7 and the latter one of ·08. In the Bombay, Deesa, and Aden district there was an increase of 6·8 in the admission rate, but a decrease of ·65 in the death rate. The Poona district gave an admission rate of 24·8 and a death rate of ·53, as compared with 25·5 and *nil* respectively in 1891. In the Mhow district there was a decrease both in the admission and death rates of 15·2 and ·34 respectively. In the Nagpur district the admission rate was 16·1 and the death rate *nil*, as compared with 20·8 and 1·99 respectively. The Sind district shows a decrease of 11·3 in the admission rate, the rate for the year being 42·8, but the death rate ·67 contrasts with *nil* in the preceding year. The deaths in the Command were 4 from pneumonia, 1 from bronchitis, and 1 from pleurisy; the invalid died from pneumonia.

Diseases of the Digestive System caused 1,631 admissions and 19 deaths, two invalids having died after leaving the Command. Both the admission rate, 128·4, and the death rate, 1·50, exceed the corresponding rates of the previous year by 4·5 and ·40 respectively. In the Bombay, Deesa, and Aden district the admission rate was 127·1 and the death rate 1·75. Compared with the corresponding rates of the previous year the former exceeds by 18·7 and the latter by ·82. In the Poona district there was a decrease of 25·5 in the admission rate and of ·25 in the death rate. In the Mhow district both the admission and death rates exceed those of the previous year by 17·7 and ·33, the respective rates for the year having been 171·0 and 1·33. The Nagpur district gave an admission rate of 138·7 and a death rate of 1·07, as compared with 130·1 and ·99 respectively. In the Sind district also there was an increase of 18·5 in the admission rate and of ·69 in the death rate. The deaths in the country were 7 from abscess of liver, 2 from peritonitis, 2 from diarrhœa, and 1 each from jaundice, hepatitis, cirrhosis of liver, enteritis,

Bombay.

typhlitis, and ulcer of stomach. The deaths of invalids were both due to abscess of liver. *Vide* table in Abstract XXXIV. for the prevalence of diarrhœa, hepatitis, and abscess of liver.

Diseases of the Lymphatic and Glandular System caused 488 admissions, giving the ratio of 38·4, which exceeds that of the previous year by 3·8. Compared with the corresponding results of the previous year an increase occurred in all the districts (excepting Poona, where there was a decrease of 4·0) as follows: Bombay, Deesa, and Aden, 4·7; Mhow, 1·9; Nagpur, 25·5; and Sind, 9·5.

Diseases of the Urinary System furnished 34 admissions and 4 deaths, including that of an invalid. The admission rate was 2·7 and the death rate ·31, as compared with 2·2 and ·16 respectively. In the Bombay, Deesa, and Aden district the admission rate, 3·5, was almost the same as in the previous year, but the death rate, ·58, shows an increase of ·27. In the Poona district the admission rate, 1·3, was exactly the same, and the death rate was ·26, as compared with *nil* in 1891. In the Mhow district there was an increase of ·7 in the admission rate, but a decrease of ·33 in the death rate. In the Nagpur district the admission rate was 1·1, as compared with *nil* in 1891. The Sind district caused an admission rate of 2·7, as compared with 1·3 in the preceding year.

Diseases of the Generative System furnished 705 admissions. The admission rate, 55·5, presents an increase of 6·8. Compared with the corresponding results of the previous year a decrease occurred as follows:—Mhow district 12·8, and Sind district 2·3, the instances of increase were:—Bombay, Deesa, and Aden district, 5·4; Poona district, 6·5; and Nagpur district, 81·4.

Diseases of the Organs of Locomotion.—For these affections 103 admissions are recorded. The admission rate, 8·1, exceeds that of the preceding year by ·8. In the Bombay, Deesa, and Aden district the admission rate was 12·3, as compared with 9·6 in 1891. The Poona district caused an admission rate of 8·2, which stands almost the same as in the previous year. In the Mhow district there was a decrease of 1·3, the admission rate for the year being 4·7. The Nagpur district caused an admission rate of 5·4 and the Sind district of 7·3. Compared with the corresponding rates of the previous year the former shows an increase of 3·4 and the latter one of ·8.

Diseases of the Connective Tissue.—For these diseases there were 263 admissions and one death; an admission rate of 20·7 and a death-rate of ·08, as compared with 17·4 and *nil* respectively in the previous year. Compared with the corresponding results of the previous year an increase occurred in the districts as follows: Bombay, Deesa, and Aden 8·1; Mhow ·2, and Sind 20·9; and a decrease in those of Poona 2·3, and Nagpur, 8·7.

Diseases of the Skin.—For cutaneous affections 938 admissions are recorded. The rate, 73·8, exceeds that of the previous year by 13·4. Excepting the Poona district, where there was a decrease of 8·6 in the admission rate, an increase occurred in all the other districts as follows:—Bombay, Deesa, and Aden, 21·3, Mhow 3·0, Nagpur 13·6, and Sind 70·0.

Poisons.—Under this head 14 admissions and one death are recorded, the death being the result of alcoholic poisoning. The admission rate 1·1, is almost the same as in the previous year, while the death rate, ·08, is unchanged. In the Bombay, Deesa, and Aden district the admission rate was 3·5, and the death-rate ·29, as compared with 3·1 and ·31 respectively. In the Sind district the admission rate, 1·3, is double that of the previous year. The admission and death rates in all the other districts were *nil*. The cases were, oxalic acid 1; alcohol 1; tobacco 1; poisoned wounds by stinging insect 1; ray fish 4; dead animal matter 3: and vegetable substances 3.

Injuries, General, caused 45 admissions and 16 deaths. The admission rate 3·5, exceeds that of the previous year by ·5, but the death rate 1·26, presents a decrease of ·86. In the Bombay, Deesa, and Aden district, there was an increase both in the admission and death rates of 1·8 and ·50 respectively. In the Poona district the admission rate presents an increase of ·8, but a decrease of ·26 is observed in the death rate. In the Mhow district there was a decrease both in the admission and death rates of 3·0 and 1·34 respectively. In the Nagpur district the admission and death rates were *nil*, as compared with

Bombay.

5·9 and 12·90 respectively in the preceding year. In the Sind district there was an increase of 8·1 in the admission rate, and of 2·71 in the death-rate, the respective rates for the year having been 10·0 and 4·01. Amongst troops on the march the death-rate was 15·87, as compared with *nil* in the previous year.

Injuries, Local, furnished 1,279 admissions and nine deaths. The admission rate, 100·7, presents a decrease of 6·1, but the death-rate, ·71, an increase of ·48. In the Bombay, Deesa, and Aden district there was a decrease of 8·4 in the admission rate, but an increase of ·57 in the death-rate. In the Poona district, there was a decrease of 17·3 in the admission rate, but the death rate was 1·05 as compared with *nil* in 1891. In the Mhow district there was an increase both in the admission and death rates of 16·9 and ·34 respectively. In the Nagpur district there was a decrease of 15·7 in the admission rate and of ·99 in the death-rate. The Sind district gave an admission rate of 124·3, which is lower than that of the preceding year, by 17·9.

Suicides.—During the year 5 deaths are recorded from this cause, 4 of these occurred from gunshot wounds, and one from cut-throat. In all these cases the verdict was "temporary insanitary."

Surgical Operations.—During the year 2,546 operations were performed with 7 deaths, with a few exceptions all were minor ones and not worth noticing.

Invaliding.—The number of men invalided home during the year was 271, being in the ratio of 21·34 per 1,000, which is lower than the previous year's rate by 7·66, and than that for the previous decennium by 8·39. In Abstract XLIII. will be found the invaliding ratios for the different arms of the service and also for individual corps. In the only cavalry regiment, the 7th Hussars, at Mhow, the rate was 30·87, a fraction above the previous year. In the artillery it was 19·60, or a decrease below previous year of 9·46. In the infantry it was 18·49, a decrease of 10·74 below the previous year. The highest rate was in the 1st Battalion Loyal North Lancashire Regiment, with a rate of 32·70, and the lowest, the 2nd Battalion Lancashire Fusiliers with a rate of 7·55.

With regard to age, the invaliding rate amongst men under 20 years of age was 18·43 per 1,000, as contrasted with 50·25 in previous year; from 20 to 25 years it was 22·24, from 25 to 30, 20·27, and from 30 to 35, 27·88. There was a general decrease as compared with the previous year. With regard to service in the country, the rate for those in their first year of service was 21·15, in the second year 34·46, third year 18·64, fourth year 17·10, fifth year 20·99, and from five to ten years 23·19. These figures compare favourably with the returns for the previous year.

The principal causes of invaliding were debility 54 cases, nervous disorders 24 (including 10 of mental disease), diseases of digestive system 24, diseases of circulatory system 22, malarial fevers and secondary syphilis 19 each, local injuries 18, and tubercular diseases 16.

The number of men finally discharged as unfit for further service was 149, or a ratio of 11·73 per 1,000. This is a decrease below previous year of 3·44, and below previous decennium of 1·58. The principal disabilities necessitating discharge were diseases of respiratory system 22, or a rate of 1·73; mental disease 17, or a rate of 1·34; debility 18, or a rate of 1·42; secondary syphilis 11, or a rate of ·86, &c. The ratios do not present any marked degree of difference as compared with those of the previous year.

Officers.—In an average annual strength of 475 commissioned officers there were 419 admissions and 8 deaths. Both the admission rate, 882·1, and the death rate, 16·84, exceed the corresponding rates of the previous year by 184·7 and 6·34 respectively. During the year 30 officers were invalided to England, which is equal to a ratio of 63·16, and is higher than that of the preceding year by 12·74. The chief causes of admissions were malarial fevers 128, simple continued fevers 40, enteric fever 8, dysentery 8, diarrhœa 14, liver diseases 15, and injuries 53. The deaths were due to the following causes: enteric fever 4, and one each from myelitis, hepatitis, abscess of liver, and carbuncle.

Women.—The average annual strength of women was 585. During the year 497 admissions and 6 deaths are recorded. Both the admission rate

Bombay. 849·6, and the death rate 10·26 are higher than the corresponding rates of the preceding year by 206·9 and 4·02 respectively. The principal causes of admissions were malarial fever 153, debility 147, and simple continued fever 30. There were 3 cases of small-pox, and one of cholera which proved fatal. The other deaths were from the following causes: ague, remittent fever, apoplexy, hæmorrhage after parturition, and pelvic abscess, one each respectively.

Children.—In an average annual strength of 1,150 children, there were 665 admissions and 54 deaths. The admission rate, 578·3, exceeds that of the previous year by 104·7, but the death rate, 46·96, is lower by 8·24. The chief causes of admissions were malarial fevers 147, measles 78, debility 78, simple continued fever 63, conjunctivitis 64, bronchitis 47, diarrhœa 36, teething 22, and convulsions 19. The deaths were due to the following causes, convulsions 10, simple continued fever 5, debility, tubercle, inflammation cerebral membranes and diarrhœa 4 each, diphtheria 3, measles 2, enteric fever 1, and the remainder to various diseases.

SANITARY CONDITIONS.—With regard to the sanitary condition of the different districts and stations, and the health of the troops in them, the following information is taken from the report of the Principal Medical Officer, Surgeon-Major General W. M. Webb.

Bombay, Deesa, and Aden District.—At Colaba, the sanitary state of the barracks, hospital, &c., was satisfactory, but the hospital accommodation was insufficient, the verandahs during the monsoon, and tents during the fair weather, being required to supplement it. The dhobies' washing place is very close to the hospital, and the resulting sounds most annoying to the patients; it is desirable that it should be transferred elsewhere. There were no epidemics during the year, but there was a large number of cases of both simple continued fever and ague, the increase of which may be attributed in a great measure to the late and heavy rainfall, which rendered the nights abnormally cold in October and November. The Medical Officer in Charge, Station Hospital, ascribes those diseases to the low-lying ground on which the barracks are built, but the Principal Medical Officer of the district is more inclined to consider them due to the cold nights, when the breeze was both cold and relaxing. Five cases of enteric fever were admitted, two of which proved fatal. Three of the cases were contracted up-country. At Deolali, the sanitary state of the barracks and hospital was very satisfactory throughout the year. The invaliding was at the rate of 28·93. The barracks were fully occupied during the non-trooping season by convalescents sent from Bombay, Nagpur, and Mhow. Owing to the large number of admissions from July to October, No. 1 barrack was used to accommodate the extra sick, but probably owing to its being on black soil it was found unsatisfactory, and No. 14 was used instead, and was found suitable. The hospital storekeeper's store was enlarged, and quarters for 9 families and 32 single men were added for servants. A reading room was built, and various minor improvements were executed. The building of quarters for the warrant medical officers was begun. The hospital laundry was found most useful, and it is probable that water will be laid on to it. The medical officer recommended some increase to the latrine accommodation, and that a new ground should be selected for the disposal of the night-soil. The arrangements made for the supply of milk and butter for the station continued to be very satisfactory. The general health of the troops passing through was good; but the convalescents, especially those from Nagpur and Mhow, though they showed improvement till beginning of rains, suffered much from ague and simple continued fever from July to October. As a sanitarium the station has been somewhat of a failure, probably owing to its not being high enough above the sea, and to the cold and damp S.W. winds after the setting in of the monsoon. The medical officer recommended that those barracks which are situated on black soil should not be used till the surface drainage is improved. Of the eight cases of enteric fever three were contracted in Deolali (two of the patients being convalescents from Kamptee) and the remainder at other stations. There were no deaths from this disease. Cholera was very prevalent in the surrounding unsanitary villages, but only one man contracted the disease and died of it. He had probably been visiting some of the villages in which cholera was raging. At Deolali, as elsewhere, during the year, fever was rife, there being 409 admissions for ague and seven for simple continued fever, principally from convalescents from Kamptee and Mhow, who did not improve, and showed repeated admissions. The majority of cases occurred from July to October. At Khandala the sanitarium was opened on the 6th October 1891, closed on the 30th June 1892, and re-opened on the 1st October. The sanitary state of the barracks and hospital was satisfactory. A new canteen and coffee-shop was in course of construction at the close of the year. Quarters for the men of the Army Hospital Native Corps and the doolie-wallas are much required, those at present allotted to them being too far from the hospital. The warrant medical officer had as quarters two of the end rooms of the hospital; if he were suitably housed the hospital accommodation would be increased. The average strength was 105, and there were 84 admissions to hospital, 17 as transfers from station hospitals elsewhere. All the men sent to the sanitarium benefited by the change, and improved in condition and health during their residence. At Ahmedabad the sanitary state of the barracks and hospital was very satisfactory during the year, which, all through, was an unusually sickly one. In the earlier part of it influenza and fever prevailed, and after the rains fever became so prevalent as almost to be considered epidemic. During the year there were 649 admissions against 449 in 1891, the increase being almost entirely due to malarial fevers; it was most marked in the months of September, October, and December, so much so that during the last month it was considered advisable to send the troops under canvas a few miles away from cantonments for change of air. Quinine was given prophylactically. The excessive sickness was probably owing to the unusually heavy rainfall, which was nearly double the normal amount, being 54·60 inches as compared with 31·50 in 1891. Fevers were equally prevalent among the civil population of surrounding districts. Cholera prevailed in the city of Ahmedabad and surrounding villages for some weeks during the hot weather, and a case occurred in the Camp Bazaar. None of the troops, however, were attacked. At Deesa the strength of the garrison was much increased in the beginning of December by the arrival of a battalion of the Leinster Regiment from Agra, replacing the two companies of the King's Own Yorkshire Light Infantry. The heat in April, May, and June was excessive, and the rainy season of longer duration than usual. The sanitary state of the barracks and hospital was satisfactory during the year. After the arrival of the Leinster Regiment there was some slight overcrowding, but measures were taken to remedy this. The mortuary was condemned, and estimates for a new one submitted. Before the arrival of the Leinster Regiment two of the wards were used as a female hospital; afterwards it was removed to a suitable building was allotted for the purpose. At Abu the sanitarium was opened in March for invalids, and continued to be used till September. The sanitary state of the station was satisfactory, and the health of the men sent to it improved generally. The amount of fever which prevailed amongst the inhabitants from early in October to the middle of December proved the wisdom of the withdrawal of all troops possible before that time. The few who remained were made to attend at the hospital daily to have a prophylactic dose of quinine. There were two cases of enteric fever, one of which proved fatal. At Aden the sanitary condition of the barracks was very satisfactory. During the year new offices and an institute were erected at Steamer Point. There was no overcrowding, except when, owing to deficient hospital accommodation, one of the blocks had to be appropriated for the sick.

Bombay.

The sanitary condition of the hospital was as good as it could be under the circumstances. The unsuitableness of the hospital at Steamer Point, and the necessity for a new one have been so often pointed out, that it seems needless to again bring the fact to notice. The medical officer in charge remarks: "The whole establishment is probably unique amongst the hospitals of "modern European armies." The health of the station seems to have been steadily deteriorating since 1889, as will be seen by the following figures:— The ratio of admissions per 1,000 of strength in 1889 was 1,360; in 1890, 1,517; in 1891, 2,110; in 1892, 2,430. This great increase is due almost entirely to ague, the admissions for which have risen from 156 in 1889 to 1,354 in 1892. The medical officer remarks: "And even this very large "number does not truly represent the entire number of ague cases, as a very "large number of slight cases were detained for one day only, and on their

Bombay.

" temperatures becoming normal were sent out to attend in the evenings for " quinine. These cases would probably amount to several hundreds more " and bring the ague cases up to 2,000 at least." To form a theory for the cause is difficult. The climate remains much the same; it is true that there was a heavy rainfall in 1890, in which year the admissions were more than double those of the previous year; but there was even a heavier rainfall in 1885 which caused no increase, in fact the reverse, the admissions diminishing from 137 in 1884 to 88 in 1885; 73 in 1886, and 58 in 1887. The disturbance of the ground for new fortifications has been suggested as a cause, but this has been going on for some time, and a few years ago to a greater extent than at present. Whatever the causes of the malaria may have been, they occurred at the Isthmus Position in their most violent and concentrated form. The barracks in this Position, which had been abandoned in 1891 owing to the great prevalence of fever amongst the troops, were re-occupied by a detachment of the Liverpool Regiment, and in May every man there, including officers, their servants, and the native establishment, was attacked with ague. The Ordnance establishment had to be removed at the same time. At the end of October a company of the South Wales Borderers was sent to the Position, and in the course of a few weeks all the men and officers were " down with ague." The troops were withdrawn on the 15th November, but during that month that company furnished 46 out of the total of 109 admissions from the whole garrison for ague, and in December 42 out of a total of 97.

Poona District.—At Poona the year was a very unhealthy one, enteric and malarious fevers were very prevalent, the admissions from both being largely in excess of those in 1891. The admissions, 2,278, and the average daily sick were considerably less than in the previous year, but this was caused by the very considerable decrease, 183, in the number of admissions for venereal complaints. The deaths, 27, though fewer than in 1891, were largely in excess of the average of former years, this excess being due to enteric fever. There was no cholera among the troops during the year, though it was prevalent in the city and district in July, August, and September. The sanitary state of the barracks was satisfactory, paved surface drains were constructed to carry off the ablution water from the Ghorpuri barracks; these drains within barrack boundaries were in good order, but when they reached cantonment ground they ceased to be paved and became more or less a nuisance and danger to health, there not being sufficient fall the water stagnated and became offensive. These defects were brought to notice, but want of funds prevented immediate remedy. The new barrack, No. 5, continued to be the most unhealthy, the alterations made some years ago and the trees planted to windward seem to have had no good effect during the last two years. The sanitary state of the hospitals and their surroundings was very satisfactory, and the accommodation sufficient. At Kirkee the sanitary conditions of all the barracks was very good. The system of removal of sullage water from the bath and cook rooms, though improved, was not quite satisfactory, and occasionally through carelessness of the bhisties there was some saturation of the ground round the tanks which collected it. The infantry barracks were still overcrowded; the men in these had less than half the regulation cubic space, and many men slept in verandah rooms with low roofs. The Principal Medical Officer of the district states that he has repeatedly pointed this out. Accommodation for 80 in the new double-storied barracks was taken up by stores and offices, and the infantry detachment was quartered in converted married quarters. Though the health of the troops was fair, the year was not a healthy one compared with 1891. With almost the same strength there were 136 more admissions, chiefly from simple continued fever. The regimental institute continued to be of great benefit to the men and was largely patronised, and it is probably owing to the excellent arrangements made for suppers, &c. that there were no admissions into hospital during the year from the effects of drink. The supplies generally were good, and the milk and butter supplied for the hospital from the Government farm excellent. At Ahmednagar the sanitary state of the barracks and hospital was very satisfactory; there was no overcrowding. The only addition made during the year was a new latrine for native followers. At Satara the sanitary state of the barracks and hospital in cantonments

Bombay.

was very satisfactory. The building in the fort, however, is low, dark, badly ventilated, with mud floors, is badly constructed, and out of repair. It requires thorough reconstruction to make it fit for occupation. The general health of the troops was very satisfactory. There was no epidemic disease, no cholera, and no enteric fever; no deaths from disease, and only one from an accident. Ague was more prevalent than in 1891, due to the heavy rainfall. Water supply in pipes was not laid on, but the works were nearly completed. The Purandhur sanitarium proved most useful during the year, and nearly the whole of the convalescents sent up for change of air improved in health, strength, and weight, and rejoined their corps fit for duty. The sanitary state of the station was satisfactory, and no epidemic disease occurred. There was one admission for enteric fever, but there is no doubt that the disease was contracted before arrival at the station. A fatal case returned as enteric fever is stated by the Principal Medical Officer to be more probably dysentery with abscess of the liver. The majority of the admissions into hospital were for ague and venereal disease. There is no malaria at Purandhur, and the cases of ague were all relapses. The greater number of cases of venereal disease were contracted before arrival. The alterations of No. 1 barrack commenced in 1891 were completed, and the building occupied on the 1st May. No. 2 barrack being considered unsafe, it was handed over to the Public Works Department for repair and alteration; it was expected to be ready for occupation in March 1893. During the alteration of these buildings, men for whom there was no accommodation in the remaining building were housed in sergeants' quarters, so that there was never any overcrowding. A shed for dry earth was constructed, and a wire fence put along the edge of the cliff in the hospital compound. The quarters for men of the Army Hospital Native Corps were in a very bad state of repair. A cantonment latrine, which is also to serve for the men of the Army Hospital Native Corps was being constructed. Improvements in the arrangements for heating were effected.

Mhow District.—At Mhow the sanitary state of the barracks and hospitals was very satisfactory during the year. A few minor improvements were carried out. Although there was a larger number of admissions, yet the mortality compares favourably with that of last year, there having been only nine deaths, one of which was accidental, against 15, all due to disease, in 1891. The principal cause of the increase was malarial fevers. During part of the year small-pox was prevalent in the bazaar and surrounding villages, and 6 cases and one death occurred amongst the troops; thirteen cases of influenza occurred during the early part of the year. At Nasirabad the sanitary condition of the barracks and hospital was satisfactory, and there was no over-crowding. In spite of the lateness of the monsoon and the consequent continued drought, the supply of drinking water remained sufficient and of good quality. The monsoon when it did set in was unusually heavy and the rainfall nearly double the average. At Neemuch the sanitary state of the barracks and hospital was very satisfactory, and there was no overcrowding. The general comfort of the recreation rooms has been much improved. Small-pox was very prevalent in the beginning of the year in the surrounding districts, and a few cases occurred in the bazaar. Two cases occurred amongst the troops, one of which proved fatal. Cholera was also very prevalent in the surrounding districts from April till July, and nine cases occurred in the bazaar, but none of the troops were attacked. At Khandwa the rest camp was open for the reception of troops till the 25th April, and re-opened on the 22nd September. During the year 377 officers, 18,554 men, 417 women, and 725 children passed through the camp. The only case detained in hospital was one of quinsy—a young soldier on his way from England to Nasirabad. No special cases of illness occurred amongst the troops. At Taragurh the sanitarium was opened for the reception of convalescents on the 8th April and closed on the 1st November. The total numbers sent for change of air were 2 officers, 134 men, 10 women, and 25 children. The majority benefited by the change. For some time, owing to the prevalence of cholera in Ajmere, the sending up of convalescents was stopped, and later, when the disease abated, arrangements were made to send them up the southern slope of the hill. Four cases of enteric fever were admitted, two of which, and probably a third, contracted the disease at Nasirabad.

Bombay.

Sind District.—At Karachi the sanitary condition of the barracks and hospital was satisfactory, and there was no overcrowding. The kitchen of the latter was enlarged. The year was an unfortunate one, the heat in the hot weather much greater than usual, and the rain about double the average. As the station and city are only a few feet above the sea level, the ground is at all times more or less water-logged, and the drainage of necessity bad, so that the rain-water made pools in every direction, many of which were both filthy and foul-smelling. The fullest use was made of the Ghizree Sanitarium, where all the sick and convalescents rapidly improved. Thirteen cases of pneumonia and 1 death occurred, ten of which were from the trooping depôt in December. The Medical Officer remarks, "As there were only 3 cases among the troops in " garrison, including a number of weakly men from Quetta, it will be evident " that pneumonia is not one of the diseases to fear when troops are properly " housed, and I think it will be equally evident that it is a formidable disease " among troops unprovided with cots in tents in Karachi, where the water is " not far from the surface." The cases admitted from depôt were of a much more severe type than the others.

Karachi Trooping Depôt.—The camp, which accommodated 2,700 men, was pitched in the same locality as in 1891, but somewhat more removed from the old native cemetery, and with the tents differently arranged. The sanitary condition of the camp, during the whole time it was open from November to March, was excellent, and there was never any overcrowding. Exclusive of officers and their families, 3,014 men, 145 women, and 342 children, passed through for embarkation for England, and 4,070 men, 125 women, and 126 children arrived from England and Natal; their health generally was excellent. The hospital, a non-dieted one, had accommodation for 16 men and 8 women, with the necessary subsidiary arrangements. All invalids who, when inspected on arrival, were not considered strong enough to live in camp, were at once sent to the station hospital, and all serious cases occurring in camp were taken there at once. Male lunatics were treated in the station hospital, and the only female lunatic was put in the female hospital, which fortunately at the time was empty. The Medical Officer in charge of the camp strongly recommends that some special arrangements be made in future at the camp for the reception and detention of insane women, as tents are not suitable for many reasons, not only being hot during the day, but unsafe, more particularly in the absence of trained assistants and other conveniences. He is also of opinion that general service tents are unsatisfactory for accommodation at the camp, as they do not afford sufficient comfort during either cold or warm days, more especially when the strong north-easterly winds blow. Fortunately, during this trooping season, there was no exceptional temperature or rainfall.

He further states that "In the event of its being considered desirable to " establish a permanent trooping depôt at Karachi, that it be built on the " plateau to the north of Ghizree Sanitarium, which is about a mile and a half " from the last camping ground, my reasons being that the ground is drier " and more elevated with exposure to a good sea air; further distance from " barracks; and stone abounds there for building purposes. A large number " of troops could be sent there for change of air from Karachi and elsewhere. " If the old camping ground be selected, a great drawback would be that, " during a great portion of the hot weather and monsoon, the breeze blows " straight across the mangrove swamps towards the camp, which is situated " only about a mile to the north-east, and it is problematical whether, if the " permanent buildings were then occupied, the health of the troops might not " suffer in consequence."

At Hyderabad the sanitary state of the barracks and hospitals was satisfactory, and on the whole the sickness was not excessive during the year, the admissions amounting to 818, a ratio of 1850·7 per 1,000, and the average number in hospital being slightly over 31. There were 11 deaths in all, 2 from enteric fever, and 2 from cholera. During the extremely hot weather 8 cases of heat apoplexy occurred, but only one died. Heavy floods occurred in August, the aqueduct which conveys water to the station was washed away, and the troops were obliged to use the flood water; as this had every chance of being contaminated, it was boiled before use. A more suitable ground for the disposal of excreta and refuse was brought into use. During part of the year, cholera was almost universally present in the surrounding district, but every means possible were taken to prevent its occurrence among the troops, with the result that only two men were attacked, both of whom had disregarded the regulations, and had been in the bazaar drinking country liquor. There was a small outbreak among the native followers, but all the necessary precautions were taken and it did not spread. With the drying up of the flooded land malarial fevers became very prevalent.

Bombay.

Nagpur District.—At Kamptee the sanitary state of the barracks and hospital was satisfactory. During the year there were no structural alterations made. At Sitabaldi the sanitary condition of the barracks and hospital was satisfactory. The roof of the barrack, which in previous years had leaked considerably during the monsoon, was opened up and put in thorough repair, so that now the rooms were kept dried. New latrines have been constructed and the lavatory improved. The general health of the troops was very good. The number of admissions to hospital was almost the same as last year, and there were no deaths. Small-pox prevailed in the bazaar, but none of the troops were attacked. There was a marked decrease in the number of cases of ague, probably owing to the barracks having been made so much drier. Venereal disease gave rise to about one-third of the admissions.

XIV.—ON THE HEALTH OF THE TROOPS SERVING IN EGYPT.

Sickness and Mortality.

Egypt.

The average strength of British troops serving in Egypt was 3,102 warrant officers, non-commissioned officers, and men. The force consisted of one squadron of the 1st (King's) Dragoon Guards, the 10th Company, Eastern Division, Royal Artillery, the 24th Company, Royal Engineers, the 1st Battalion, Devonshire Regiment, the 1st Battalion, South Wales Borderers, 1st Battalion, South Staffordshire Regiment, the 1st Battalion, Dorsetshire Regiment, Mounted Infantry, and detachments of Army Service Corps, Medical Staff Corps, Ordnance Store Corps, Miltiary Police, and Garrison Staff.

The above were stationed in Egpyt for the whole of the year with the following exceptions:—The Devonshire Regiment left for India on the 28th December and the South Wales Borderers arrived on 29th December.

The stations occupied were Cairo and Alexandria.

In the subjoined table will be found the principal statistics of sickness, mortality, and invaliding, &c. among the troops:—

1892. Average Strength.	Admissions.	Deaths			Invalids		Constantly Sick.	Ratios per 1,000 of Strength.				
		In the Command.	Of Invalids.	Total.	Sent Home.	Finally Discharged.		Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
3,102	3,162	44	—	44	74	30	210·44	1019·3	14·18	23·86	9·67	67·84

Compared with the corresponding ratios in the previous year there is an increase of 29·1 in the ratio of admissions and one of 9·37 in the constantly sick rate, also of 6·93 in the death rate, but as compared with the ratios for the previous 9 years there is a decrease of 191·2, 4·53, and 9·60 respectively. The average sick time to each soldier was 24·83 days, an increase of 3·49 days over previous year, but a decrease of 1·58 on the average for preceding 9 years.

The average duration of each case of sickness was 24·36 days, longer than in the previous year by 2·81, and than the average period for nine years by 2·54 days.

The following table shows the relative sickness in Cairo and Alexandria:—

Stations.	Average Strength.	Admissions.	Deaths.	Ratios per 1,000.	
				Admissions.	Deaths.
Cairo - - - -	2,186	2,063	18	943·7	8·23
Alexandria - - - -	916	1,099	26	1199·8	28·38

These rates do not differ materially from those of the previous year with the exception of the death-rate for Alexandria, which shows an increase of 24·97.

In Abstract XL. will be found the principal statistics of sickness and mortality of the different arms of the service, and of the several corps serving in Egypt during the year. Of the arms of the service the infantry gave the highest admission ratio, 1109·3 per 1,000, the Engineers are next with 875·0, the Cavalry next with 804·2, the Artillery 653·2, and Departmental Corps 498·1. The highest rate of mortality was in the infantry, 16·08. The constantly sick rate was highest in the infantry, 75·06 per 1,000, and lowest in the Departmental Corps, 29·50. Of individual corps, the Devonshire Regiment had the highest ratios for admission and average constantly sick, being 1286·4 and 100·91 respectively, followed by the South Staffordshire Regiment with 1162·5 and 65·27 respectively. An extensive epidemic of enteric fever of a very pernicious and fatal character occurred at Alexandria in the 1st Devonshire Regiment, and, strange to say, in 1891, when the regiment was one year younger and not acclimatised, they enjoyed better health in this respect than in 1892. *Egypt.*

In the subjoined table will be found the sickness and mortality among the troops arranged according to the age of the men :—

Ages.	Average Strength.	Admissions.	Deaths in Command.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years - -	159	354	4	3	2226·3	25·16	18·87
From 20 to 24 years -	1,493	1,684	20	37	1127·9	13·39	24·78
„ 25 „ 29 „ -	1,180	951	15	26	805·9	12·71	22·03
„ 30 „ 34 „ -	207	144	4	6	695·6	19·32	28·98
„ 35 „ 39 „ -	48	24	1	1	500·0	20·83	20·83
Over 40 years - -	15	5	—	1	333·3	—	66·66
Total - -	3,102	3,162	44	74	1019·3	14·18	23·86

It shows that the highest admission ratio was among men under 20 years of age, and the next in those between 20 to 25 years.

In the next table will be found the sickness and mortality among the troops, arranged to show, as far as possible, the influence of length of service in the Command :—

Length of Service in Command.	Average Strength.	Admissions.	Deaths in Command.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year - -	1,363	1,365	10	22	1001·4	7·34	16·14
From 1 to 2 years -	844	1,203	26	29	1425·4	30·80	34·36
„ 2 „ 3 „ -	461	314	4	20	681·1	8·68	43·38
„ 3 „ 4 „ -	275	228	4	2	829·1	14·54	7·27
„ 4 „ 5 „ -	34	7	—	—	205·9	—	—
Over 5 years - -	125	45	—	1	360·0	—	8·00
Total - -	3,102	3,162	44	74	1019·3	14·18	23·86

The highest ratios both for admission and death-rate were in men from 1 to 2 years' service in the Command.

In Abstract XXXVI. will be found the principal statistics of sickness and mortality, &c. arranged according to the different groups of diseases.

Egypt.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.—Small-pox.* Only two cases of this disease occurred, one at Cairo and one at Alexandria. *Scarlet fever* caused 4 admissions, all at Cairo.

Enteric fever caused 109 admissions and 32 deaths, or a ratio of 35·1 and 10·31 per 1,000 respectively. The admission rate shows an increase of 22·5 and the death rate one of 7·47 over 1891, but compared with the average for the preceding 6 years they show a decrease of 8·6 and 1·36 respectively. The constantly sick rate was also higher than in 1891 by 3·95, and lower than the previous six years by 0·41.

The relative sickness and mortality from this disease at the two stations is shown in the following table:—

Stations.	Average Strength.	Admissions.	Deaths.	Constantly Sick.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Constantly Sick.
Cairo - - -	2,186	32	10	5·54	14·6	4·57	2·53
Alexandria - -	916	77	22	14·44	84·1	24·02	15·76

As is usual, this disease attained its greatest prevalence in the autumn. It was by no means confined to young soldiers nor to men recently arrived in the country, and it is noticeable that the mortality increased in proportion to the ages of those attacked.

To the insanitary condition of the native city, and especially of those quarters usually frequented by the men, is attributed the origin of the disease, both at Alexandria and at Cairo. The quality of the water at Alexandria is so well recognized that all the drinking water used by the troops is boiled and filtered before issue.

In August in consequence of the hold the disease seemed to have taken on the barracks, on the recommendation of the Principal Medical Officer, the Ras-el-Tin Barracks were as far as possible evacuated and the troops put under canvas at Mustapha Pasha. There was at first a considerable abatement in the epidemic, but it did not last long, and the disease re-appeared among the men in camp. Every possible sanitary precaution was taken, and the very greatest care used in the isolation, disinfection, and treatment of the cases as they occurred. Many of the cases were of an acute and virulent type, terminating in rapid perforation of the bowel and death.

Simple Continued Fevers caused 372 admissions, or a ratio of 119·9 per 1,000, being a slight increase over 1891; the average constantly sick rate also shows an increase over the previous year of 2·05.

Dysentery gave 46 admissions, being a ratio of 14·8 per 1,000, a considerable dcrease from 1891 when the ratio was 20·8. There was no death. This disease is seldom severe in Egypt, and is very amenable to treatment.

Other Diseases of the first sub-group caused 24 admissions, equal to a ratio of 7·7 per 1,000. There were 23 cases of influenza and one of diphtheria.

Malarial Fevers caused 76 admissions; the ratio of admission was 24·5 per 1,000, an increase of 2·7 on the corresponding rate of the previous year, and one of 11·6 on the average rate of the preceding six years. All the admissions were due to ague.

Septic Diseases were represented by two cases of erysipelas.

Venereal Diseases.—The statistics of these affections show a considerable decrease since 1891. *Vide* next table.

Egypt.

Diseases.	1892.				1891.			
	Admissions.	Average Constantly Sick.	Ratio per 1,000.		Admissions.	Average Constantly Sick.	Ratio per 1,000.	
			Admissions.	Average Constantly Sick.			Admissions.	Average Constantly Sick.
Primary Syphilis -	132	13·57	42·5	4·37	216	16·10	68·1	5·08
Secondary Syphilis	137	13·89	44·2	4·48	170	12·96	53·6	4·09
Gonorrhœa - -	342	25·80	110·3	8 32	360	23·36	113·5	7·99

This marked decrease in the number of admissions is believed to be in a great measure due to the active steps taken by the civil and military police (after urgent representations from the Medical Department) in preventing vagrant prostitutes from frequenting the desert hollows and ravines near Abbassiyeh.

Including the sickness from simple venereal ulcer, the admission rate for primary venereal sores was 123·1, a decrease of 29·2 as compared with last year, and of 11·6 with the previous 6 years. The constantly sick ratio was 10·61, a decrease of ·90 compared with the previous year.

The total admission rate for all forms of venereal disease was 277·6, a decrease of 41·8 as compared with 1891, but an increase of 12·6 over the previous 6 years. The rate constantly sick shows a decrease of ·18 as compared with previous year, but an increase of 4·50 over the average of the previous six years.

Parasitic Diseases gave 25 admissions, being slightly in excess of last year.

Alcoholism gave 9 cases and 2 deaths.

Debility caused 63 admissions, an increase of 24 over previous year, the ratio for 1892 being higher by 8·0 than that for 1891, but lower by 11·6 than the sexennial average.

Rheumatism.—There were 70 admissions, being in a ratio lower by 9·2 than for previous year.

Tubercular Diseases.—2 cases only and no deaths.

LOCAL DISEASES.—*Diseases of the Nervous System.*—There were 41 admissions and 3 deaths, the ratio for admission being 13·2, a very slight increase over previous year. The deaths were two from inflammation of brain and membranes, and one from abscess of the brain.

Diseases of the Eye.—119 admissions, or a ratio of 38·4 per 1,000, an increase of 15·4 over last year. There were 104 cases of conjunctivitis.

Diseases of the other Organs of Special Senses gave the same number of cases as last year, being a ratio of 15·5 per 1,000.

Circulatory System.—The admissions give a ratio of 10·0 per 1,000, nearly identical with the previous year. 1 death occurred from rupture of an abdominal aneurism.

Respiratory System.—Diseases of this nature caused 151 admissions, or a ratio of 43·7 per 1,000, an increase of 18·4 over previous year. Bronchitis was the chief cause of sickness.

Diseases of the Digestive System caused 433 admissions and 3 deaths, giving ratios of 139·6 and ·97 per 1,000 respectively, a slight increase over previous year. The chief causes of admission were dyspepsia, diarrhœa, sore throat, and colic. The deaths were all from abscess of the liver.

Diseases of the Lymphatic and Glandular System caused 26 admissions, or 8·4 per 1,000, below last year's rate by 2·9, and also below the average.

Diseases of the Urinary System gave 7 admissions as compared with 4 in the previous year.

Diseases of the Generative System.—There were 316 admissions, or a ratio of 101·9 per 1,000, a slight increase over last year. Ulcer of the penis as usual caused the large majority of cases, viz., 249.

Egypt.

Organs of Locomotion gave 48 admissions being in ratio of 15·5. ***Diseases of connective tissue*** gave 51 admissions, a decrease as compared with 1891.

Diseases of the Skin caused 166 admissions being a ratio of 53·5 per 1,000, a decrease from previous year of 8·6. The principal causes were boils and ulcers.

General Injuries.—1 case of multiple injury and 3 deaths occurred from submersion.

Local Injuries.—258 admissions recorded, or a ratio of 83·2 per 1,000, the principal causes being contusions, sprains and wounds.

Invaliding.—The number of men invalided home was 74, being in the ratio of 23·86 per 1,000. This is a slight increase over the previous year's rate, when 22·38 was recorded, but lower than the average for the previous sexennial period by 23·47 per 1,000. By corps, stationed in the Command the whole year, the ratios are as follows: 24th Company, Royal Engineers, 34·09 per 1,000, Dorsetshire Regiment, 30·94; Devonshire Regiment, 30·42; Medical Staff Corps, 25·00; 10th Company, Royal Artillery, 16·13; South Staffordshire Regiment, 15·73; 1st Dragoon Guards, 14·00. As to the ages the greatest number invalided was between 20 and 24 years with a ratio of 24·78. And as to service in the Command the greatest number was in men from one to two years' service giving a ratio of 34·36 per 1,000.

The principal causes of invaliding were debility 11 cases, diseases of the circulatory system 11, secondary syphilis 9, enteric fever 7.

The principal disabilities necessitating final discharge were diseases of the circulatory system 9 cases, mental diseases 7, and tubercular diseases 3. The total number was 30, giving a ratio per 1,000 of 9·67. The ratio for the previous year was 17·33.

Officers.—The average strength was 121 and the number of cases of sickness 118. There were 3 deaths, 2 from enteric fever, and one from rupture of an aneurism. Three officers were invalided home, one each for Bright's disease, remittent fever, and wound.

Amongst the cases treated were 20 of simple continued fever, 9 bronchitis, 9 influenza and 3 enteric fever. The ratio of sickness was 975·2 per 1,000, an increase over 1891 of 36·1.

Women.—Average strength 176. Cases of sickness 316 and 1 death (enteric fever). The ratio of sickness was 1795·4 per 1,000, an increase of 188·5 over last year. The death rate, 5·68, is lower than in previous year. The principal causes of illness were debility, conjunctivitis, and simple continued fever.

Children.—The average strength was 234, and there were 577 cases of sickness, giving a ratio per 1,000 of 2465·8, an increase over 1891 of 323·6. There were 16 deaths, or a ratio of 68·38, a decrease of 10·05 below previous year. The principal admissions were from simple continued fever, conjunctivitis, bronchitis, diarrhœa, influenza, teething, and debility. The deaths were 5 from debility, 4 from convulsions, 3 from diarrhœa, 2 from immaturity at birth, and 1 each from anæmia and pneumonia.

SANITARY CONDITIONS.—The Principal Medical Officer states that the health of the troops was by no means so good as in 1891. This was mostly due to an extensive epidemic of enteric fever at Alexandria. The sanitary condition of this town and its vicinity is bad and the water supply from the Mahmoudiyeh Canal is liable to constant pollution. Every effort is made to make the water the troops use only water which has been boiled and filtered. He recommends the use of the Ramleh water supply which comes from a higher part of the canal. There has been no increased cubic accommodation in barracks and hospitals during the year, but during the enteric fever epidemic at Alexandria tents were erected for venereal cases, in order to give more room.

The windows of the Citadel Hospital have been fitted with jalousies.

During the high Nile a camp was formed at Abbassiyeh, and was occupied by the 1st Devonshire Regiment from Kasr-el-Nil.

The village of Adli near Abbassiyeh has again given trouble on sanitary grounds. The civil authorities are, however, improving matters in this respect. Several other minor recommendations were made and have been attended to. No alteration has been made in the food or clothing of the troops.

XV.—ON THE HEALTH OF THE TROOPS ON BOARD SHIP.

Troops on Board Ship.

The troops embarked during the year, as shown by the returns received in the Medical Division, War Office, were :—

I.	Troops proceeding on service abroad - - -	19,731
II.	Troops returning from abroad - - - -	14,350
III.	Troops proceeding from one station abroad to another	9,846
IV.	Invalids returning to England - - -	2,292

I.—Troops proceeding on Foreign Service.

The total number of warrant officers, non-commissioned officers, and men embarked for foreign service during the year was 19,731, the equivalent annual strength being 1,318. There were 1,435 admissions and 9 deaths, being in the annual ratios of 1088·7 and 6·84 per 1,000 respectively. Compared with the corresponding ratios for the previous year there is a decrease of 104·8 in the admission rate and an increase of 2·50 in the death rate, and as compared with previous decennial period a decrease of 49·3, and an increase of 2·97 respectively.

The admissions and deaths in the different groups and orders of diseases are shown in Abstract XXXVII.

General Diseases.—*Diseases dependent on Morbid Poisons.*—There were two cases of eruptive fever, one of measles on board H.M.S. "Euphrates," and another of the same disease on H.M.S. "Serapis," *Enteric fever* caused one admission, which terminated fatally on H.M.S. "Crocodile." *Other continued fevers* caused 12 admissions, or a ratio of 9·1, being a decrease below previous year of 5·4. *Malarial fever* caused only 1 admission, and *septic diseases* 2.

Venereal diseases, as usual, were the chief causes of illness. *Primary syphilis* caused 192 admissions, or a ratio of 145·7, being a decrease below 1891 of 37·6. Including simple venereal ulcer, the ratio was 202·6, or 25·6 below the previous year. *Secondary syphilis* caused 55 admissions, or a ratio of 41·7, being 4·0 below previous year. *Gonorrhœa* gave 428 admissions, a ratio of 324·7, being an increase of 47·9 over previous year. Including all forms of venereal disease, the total admission ratio was 569·0, an increase of 18·3 over previous year.

Rheumatism caused 34 admissions, giving a ratio of 25·8, nearly the same as in previous year.

Tubercular diseases caused 2 admissions and one death.

Local Diseases.—*Diseases of the Nervous System* caused 4 admissions, *eye diseases* 12. There were no admissions for *diseases of the circulatory system. Diseases of the respiratory system* caused 65 admissions, but only one death. The ratio being 49·3, or a decrease below that of 1891 of 31·9. *Diseases of the digestive system* gave 106 admissions, a ratio of 80·4, being 18·9 less than in previous year.

Diseases of the Lymphatic and Glandular System gave an admission ratio of 21·2, almost the same as for previous year. *Urinary diseases* only caused 2 admissions. *Diseases of the generative system* gave 131 admissions, a ratio of 99·4, being an increase of 9·5 over previous year.

Diseases of the skin gave 161 admissions, a ratio of 122·2, being a very slight decrease below 1891. Injuries gave a ratio of 80·4, being very much less, 50·8, than in previous year.

The deaths, 9 in number, were from following causes :—Enteric fever 1, alcoholism 1, respiratory system 1, nervous diseases 2, tubercular disease 1, and injuries 3.

The number of officers embarked was 947, and there were 28 admissions. The number of women was 794, and there was one death from heart disease. The number of children was 917, and there were 6 deaths, being 2 each from diarrhœa, and convulsions, and 1 each from laryngitis and debility.

Troops on Board Ship.

II.—TROOPS RETURNING HOME FROM ABROAD.

The number of effective warrant officers, non-commissioned officers, and men who embarked for England was 14,350, the equivalent annual strength being 1,042. The number of admissions into hospital was 1,401, and there were 18 deaths. This shows the annual admission ratio to be 1344·5, being higher by 265·9 than in previous year, and the death rate, 17·27, also higher by 5·48. For the preceding ten years the respective ratios are higher by 316·3 and 6·85 respectively.

The admissions and deaths in the different groups and orders of diseases are shown in Abstract XXXVII.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.*—There were no admissions for *eruptive fevers. Enteric fever* caused 5 admissions and 2 deaths. *Other continued fevers* caused 40 admissions, being in the ratio of 38·4 per 1,000, an increase of 12·5 over the previous year. There were 2 admissions for *yellow fever*, which both recovered, and 10 admissions for dysentery.

Malarial Fevers 180 admissions are recorded, giving a ratio of 172·7, being an excess of 87·8 over previous year.

Venereal Diseases.—The admissions for *primary syphilis* were 141, being in ratio of 135·3, or a decrease of 73·0 under 1891. Including simple venereal ulcer, the admission ratio was 239·0, or a decrease of 23·5 under previous year. *Secondary syphilis* caused 77 admissions, a ratio of 73·9, being an increase of 14·9 over 1891.

Gonorrhœa gave 218 admissions, a ratio of 209·2, a decrease of 34·5 under previous year. Including all forms of venereal disease, the admission rate was 522·1, a decrease below previous year of 43·1.

Alcoholism caused 2 admissions, one of which was fatal, and *debility* 12. *Rheumatism* gave 34 admissions, being a ratio of 32·6, an increase over 1891 of 15·3.

LOCAL DISEASES.—*Diseases of the Nervous System* caused 5 admissions. *Eye diseases* 11 admissions. *Circulation diseases* only 1 admission.

Respiratory Diseases caused 182 admissions and 10 deaths, showing ratios of 174·7 and 9·60 respectively. The admission ratio is in excess of the previous year by 93·7. Bronchitis caused 150 admissions and 1 death. There was a marked increase in cases of pneumonia; 30 cases occurred and 8 deaths from this cause. Pleurisy caused 1 admission and 1 death, and asthma 1 admission. *Diseases of the digestive system* caused 76 admissions, being in the ratio of 72·9, an increase of 16·3 on the previous year. Sore throat and diarrhœa were the principal causes of admission. *Diseases of the lymphatic and glandular system* gave 34 admissions, a slight decrease below previous year. *Diseases of urinary system* gave 2 admissions and 1 death. *Diseases of the generative system* caused 134 admissions, an increase of 52·4 over the ratio for the previous year. The large majority of cases, 108, were for ulcers of penis. *Diseases of the connective tissue* gave 40 admissions, and a ratio of 38·4, being an increase of 17·2 over previous year. And *diseases of the skin*, with 89 admissions, shows an increase of 46·9 over ratio for previous year.

Injuries.—66 are recorded, the principal causes were contusions and wounds, 1 case of heat apoplexy.

Officers.—591 embarked, and there were 51 admissions.

Women.—790 embarked, and there were no deaths.

Children.—1,569 embarked, and there were 9 deaths—4 from convulsions, 2 from bronchitis, and 1 each from dysentery, diarrhœa, and fracture of skull.

III.—TROOPS PROCEEDING FROM ONE STATION ABROAD TO ANOTHER.

The number of warrant officers, non-commissioned officers, and men who embarked for transit between one station abroad and another was 9,846, the equivalent annual strength being 353. The number of admissions into hospital was 597 and there were two deaths, being in the annual ratios of 1691·2 and 5·66 respectively. There is an increase of 292·6 in the admission rate and a decrease of 1·33 in the death rate as compared with 1891, and an increase of 699·0 and decrease of ·31 respectively as compared with previous decennial period.

Troops on Board Ship.

The admissions in the different groups and orders of diseases are shown in Abstract XXXVII.

GENERAL DISEASES.—*Diseases dependent on Morbid Poisons.* — *Enteric fever* caused 4 admissions. Three on board H.M.S. "Himalaya," one on H.M.S. "Euphrates," one case proved fatal. *Simple continued fever* caused 55 admissions, or a ratio of 155·8, being an increase of 117·4 over previous year. There were no cases of *dysentery*.

Malarial Fevers caused 20 admissions, an increase of 46·2 over ratio for previous year.

Venereal Diseases.—The admissions for *primary syphilis* were 86, being a ratio of 243·6 per 1,000, a decrease below 1891 of 67·6. Including simple venereal ulcer the ratio was 441·9, an increase of 85·2 on previous year. *Secondary syphilis* caused 11 admissions, a ratio of 31·2, being less by 17·7 than in 1891. *Gonorrhœa* gave 154 admissions, a ratio of 436·2, an increase on previous year of 149·5. Including all forms of venereal disease the total admission ratio was 909·3, an increase on 1891 of 217·0.

There were no admissions for *alcoholism*, and only 1 for *debility*. *Rheumatism* caused 8 admissions.

LOCAL DISEASES.—The principal causes of admission were *diseases of the digestive system*, 29 admissions and one death. *Diseases of the generative system* 84, being a ratio of 238·0, or an increase of 164·6 over previous year. *Diseases of the skin* 36 admissions. *Diseases of the connective tissue* 19.

Injuries.—21 are recorded and no deaths, the ratio is 34·9 less than in previous year.

Officers.—239 embarked, and there were only 3 admissions. *Women*, 277 embarked, and there were no deaths. *Children*, 472 embarked, and only 1 death occurred from diarrhœa.

IV.—INVALIDS RETURNING TO ENGLAND.

The number of invalids embarked for England was 2,292, the average annual strength being 153. There were 15 deaths on voyage home. The sickness and mortality amongst these invalids are accounted for in the statistical tables of the Commands from which they were invalided.

V.—SANITARY CONDITION OF SHIPS.

The sanitary condition of the different vessels and troopships, and the accommodation for the troops on the various voyages, were generally satisfactory.

ABSTRACT No. I.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS serving in the UNITED KINGDOM during the

Average Strength in Annual Returns, 100,302. † Average Strength, including Men detached, 102,237. Diseases.	Admissions into Hospital.	Died. With the Regiment.	Died. Absent from the Regiment.	Died. Total.	Invalids Discharged the Service.
I.—GENERAL DISEASES.					
GROUP "A."					
Sub-Group I. Small-pox	6	—	—	—	—
Other Eruptive Fevers	902	2	—	2	—
Enteric Fever	132	23	—	23	—
Other Continued Fevers	379	2	—	2	—
Yellow Fever	—	—	—	—	—
Cholera	1	—	—	—	—
Dysentery	34	—	—	—	4
Other Diseases	1,866	4	1	5	—
Total	3,320	31	1	32	4
Sub-Group II.—Malarial Fevers	649	—	—	—	—
Sub-Group III.—Septic Diseases	164	6	—	6	—
Sub-Group IV. Syphilis, Primary	6,692	—	—	—	—
„ Secondary	3,392	6	—	6	72
Gonorrhœa	8,856	—	—	—	7
Total	18,940	6	—	6	79
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—
GROUP "B."					
Sub-Group I.—Parasitic Diseases	33	—	—	—	—
Sub-Group II. Scurvy	7	—	—	—	—
Alcoholism	207	3	—	3	1
GROUP "C."					
Debility, &c.	726	—	—	—	73
GROUP "D."					
Rheumatism	3,567	5	1	6	41
Tubercular Diseases	312	74	7	81	171
Other Diseases	517	11	—	11	36
II.—LOCAL DISEASES.					
Diseases of the—					
1. Nervous System, Nervous Diseases	757	23	2	25	105
1. Nervous System, Mental „	122	—	1	1	82
2. Eye	1,108	—	—	—	50
3 & 4. Other Organs of Special Senses	808	1	—	1	63
5. Circulatory System	881	37	2	39	309
6. Respiratory „	6,932	128	8	136	99
7. Digestive „	12,102	25	1	26	75
8. Lymphatic and Glandular System	1,476	1	—	1	19
9. Urinary System	269	10	—	10	32
10. Generative „	2,555	—	—	—	33
11. Organs of Locomotion	830	—	—	—	63
12. Connective Tissue	2,284	1	—	1	7
13. Skin	7,138	—	—	—	20
III.—POISONS	14	1	—	1	—
IV.—INJURIES.					
1. General	16	26	3	29	2
2. Local	10,253	32	1	33	76
3. In Action	—	—	—	—	—
No appreciable disease	377	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—	—
General Total	76,364	421	27	448	1,470

---

* The average ratios for 10 years will be given in future years. The average ratios for years 1886 to 1893 in

† Ratios of deaths and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK
Year 1892, with the Ratios per 1,000 of the Strength.

Average Number constantly Sick.	Ratio per 1,000.				*Average Ratio per 1,000 from 1886 to 1891.			
	Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.	Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.
2·01	·1	—	—	·02	—	—	—	·01
63·11	9·0	·02	—	·63	6·7	·04	—	·42
22·85	1·3	·22	—	·23	1·3	·29	—	·21
14·71	3·8	·02	—	·15	5·8	·02	—	·21
—	—	—	—	—	—	—	—	—
·03	—	—	—	—	—	—	—	—
3·56	·3	—	·04	·03	·8	·04	·05	·08
64·45	18·6	·05	—	·64	15·6	·04	—	·37
170·72	33·1	·31	·04	1·70	30·0	·43	·05	1·30
21·92	6·5	—	—	·22	6·0	·01	·01	·21
10·01	1·6	·06	—	·10	2·2	·07	·01	·14
614·40	66·7	—	—	6·12	70·3	—	·01	6·39
334·54	33·8	·06	·70	3·34	37·5	·05	·76	3·38
611·37	88·3	—	·07	6·10	95·8	—	·04	6·19
1560·31	188·8	·06	·77	15·56	203·6	·05	·81	15·96
—	—	—	—	—	—	—	—	—
·76	·3	—	—	·01	·5	·01	—	·01
·41	·1	—	—	—	·1	—	—	·01
6·64	2·1	·03	·01	·07	2·9	·04	—	·09
43·23	7·2	—	·72	·48	7·5	·01	1·02	·52
219·32	35·6	·06	·40	2·19	37·7	·05	·74	2·32
47·31	3·1	·79	1·67	·47	3·7	1·00	1·76	·59
42·40	5·2	·11	·35	·42	5·3	·11	·39	·41
52·29	7·5	·24	1·03	·52	7·6	·35	1·17	·51
20·00	1·2	·01	·80	·20	1·4	·01	·94	·26
66·54	11·0	—	·49	·66	12·2	—	·68	·73
45·57	8·0	·01	·62	·45	7·3	·01	·64	·42
90·02	8·8	·38	3·02	·90	9·7	·42	3·20	·89
327·75	69·1	1·33	·97	3·27	67·8	1·42	1·01	3·40
350·23	120·6	·26	·73	3·49	102·8	·36	·96	3·06
155·41	14·7	·01	·19	1·55	18·0	·01	·08	1·85
25·11	2·7	·10	·31	·25	2·2	·17	·22	·18
153·21	25·5	—	·32	1·53	40·9	·02	·27	2·52
62·70	8·3	—	·91	·62	7·1	·04	·85	·58
101·08	22·8	·01	·07	1·01	23·0	·02	·10	1·05
273·91	71·2	—	·20	2·73	78·3	—	·20	2·83
·71	·1	·01	—	·01	·1	·04	—	·01
1·73	·2	·28	·02	·02	·2	·38	·01	·01
423·00	102·2	·32	·74	4·21	98·7	·34	·77	4·03
—	—	—	—	—	—	—	—	—
11·60	3·8	—	—	·11	2·9	—	—	·08
—	—	—	—	—	—	—	—	—
4287·89	761·3	4·38	14·38	42·75	779·7	5·38	15·89	43·97

---

* the seven years 1886 to 1892 will be given in the Report for 1893 ; those for the eight
that for 1894, &c., &c.

ABSTRACT A.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in ENGLAND during the

Average Strength, in Annual Returns, 71,416. † Average Strength, including Men detached, 72,229. Diseases.	Admissions into Hospital.	Died.			Invalids Discharged the Service.	Average Number constantly Sick.
		With the Regiment.	Absent from Regiment.	Total.		
I.—GENERAL DISEASES.						
GROUP "A."						
Sub-Group I. Small-pox	6	—	—	—	—	2·01
Other Eruptive Fevers	694	1	—	1	—	52·38
Enteric Fever	84	15	—	15	—	14·17
Other Continued Fevers	255	—	—	—	—	10·30
Yellow Fever	—	—	—	—	—	—
Cholera	1	—	—	—	—	·03
Dysentery	30	—	—	—	2	3·04
Other Diseases	1,590	3	1	4	—	53·56
Total	2,660	19	1	20	2	135·49
Sub-Group II.—Malarial Fevers	535	—	—	—	—	18·19
Sub-Group III.—Septic Diseases	127	6	—	6	—	7·62
Sub-Group IV. Syphilis, Primary	5,247	—	—	—	—	479·83
" Secondary	2,672	5	—	5	53	267·08
Gonorrhœa	6,591	—	—	—	4	456·64
Total	14,510	5	—	5	57	1,203·55
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—
GROUP "B."						
Sub-Group I.—Parasitic Diseases	28	—	—	—	—	·64
Sub-Group II. Scurvy	1	—	—	—	—	·02
Alcoholism	148	2	—	2	1	4·20
GROUP "C."						
Debility, &c.	519	—	—	—	47	33·12
GROUP "D."						
Rheumatism	2,683	5	—	5	29	165·41
Tubercular Diseases	218	59	6	65	127	33·01
Other Diseases	387	6	—	6	29	32·93
II.—LOCAL DISEASES.						
Diseases of the—						
1. Nervous System Nervous Diseases	538	17	1	18	67	37·38
Mental "	81	—	1	1	63	12·39
2. Eye	810	—	—	—	36	47·85
3 & 4. Other Organs of Special Senses	598	—	—	—	48	33·35
5. Circulatory System	614	24	1	25	231	67·75
6. Respiratory "	4,827	94	4	98	63	228·71
7. Digestive "	9,239	18	1	19	53	266·03
8. Lymphatic and Glandular System	1,120	1	—	1	13	120·29
9. Urinary System	193	8	—	8	23	18·50
10. Generative "	1,807	—	—	—	18	111·11
11. Organs of Locomotion	579	—	—	—	68	45·49
12. Connective Tissue	1,593	1	—	1	7	75·34
13. Skin	5,271	—	—	—	13	198·58
III.—POISONS	9	1	—	1	—	·48
IV.—INJURIES.						
1. General	12	16	2	18	1	1·31
2. Local	7,205	20	1	21	54	302·94
3. In Action	—	—	—	—	—	—
No appreciable disease	277	—	—	—	—	8·16
Cause unknown (refers to deaths only)	—	—	—	—	—	—
General Total	56,589	302	18	320	1,050	3,210·54

---

* The average ratios for 10 years will be given in future years. The average ratios for years 1886 to 1893 in

† Ratios of deaths and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK
Year 1892, with the Ratios per 1,000 of the Strength.

Ratio per 1,000.				* Average Ratio per 1,000 from 1886 to 1891.			
Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.	Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.
·1	—	—	·03	·1	—	—	·01
9·7	·01	—	·73	8·1	·05	—	·51
1·2	·21	—	·20	·9	·19	—	·15
3·6	—	—	·15	4·4	·03	—	·18
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
·4	—	·03	·04	1·0	·04	·05	·10
22·2	·06	—	·73	16·5	·04	—	·40
37·2	·28	·03	1·90	31·0	·35	·05	1·35
7·5	—	—	·25	7·4	·01	·01	·27
1·8	·08	—	·11	2·3	·08	—	·15
73·5	—	—	6·72	75·5	—	·01	6·92
37·4	·07	·73	3·74	39·8	·05	·75	3·65
92·3	—	·06	6·39	98·0	—	·04	6·40
203·2	·07	·79	16·85	213·3	·05	·84	16·97
—	—	—	—	—	—	—	—
·4	—	—	·01	·5	·01	—	·02
—	—	—	—	·1	—	—	—
2·1	·03	·01	·07	3·1	·04	—	·10
7·3	—	·65	·46	7·6	·01	1·01	·53
37·6	·07	·40	2·32	40·0	·05	·77	2·47
3·0	·90	1·76	·46	3·8	1·05	1·87	·62
5·4	·08	·40	·46	5·4	·12	·43	·43
7·5	·25	·93	·52	8·0	·37	1·23	·54
1·1	·01	·87	·17	1·3	·01	·88	·24
11·3	—	·50	·67	12·2	—	·72	·73
8·4	—	·66	·47	7·6	·02	·64	·44
8·6	·35	3·20	·95	10·2	·43	3·47	·95
67·6	1·36	·87	3·20	71·4	1·49	1·04	3·57
129·4	·26	·73	3·73	107·6	·39	1·02	3·24
15·7	·01	·18	1·68	18·7	·01	·08	1·96
2·7	·11	·32	·26	2·3	·18	·22	·19
25·3	—	·25	1·56	41·6	·02	·31	2·67
8·1	—	·94	·64	6·8	·05	·90	·59
22·3	·01	·10	1·05	22·9	·02	·10	1·07
73·8	—	·18	2·78	79·5	—	·20	2·85
·1	·01	—	·01	·2	·05	—	·01
·2	·25	·01	·02	·2	·36	—	·01
100·9	·29	·75	4·24	97·8	·35	·82	4·08
	—	—	—	—	—	—	—
3·9	—	—	·11	3·1	—	—	·09
—	—	—	—	—	—	—	—
792·4	4·43	14·53	44·95	805·9	5·52	16·61	46·14

the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight
that for 1894, &c., &c.

ABSTRACT B.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in SCOTLAND during the

Average Strength, in Annual Returns, 3,706.	Admissions into Hospital.	Died.			Invalids Discharged the Service.	Average Number constantly Sick.
Diseases.		With the Regiment.	Absent from Regiment.	Total.		
I.—GENERAL DISEASES.						
GROUP "A."						
Sub-Group I. Small-pox	—	—	—	—	—	—
Other Eruptive Fevers	12	—	—	—	—	1·01
Enteric Fever	1	—	—	—	—	·10
Other Continued Fevers	30	—	—	—	—	·59
Yellow Fever	—	—	—	—	—	—
Cholera	—	—	—	—	—	—
Dysentery	1	—	—	—	—	·02
Other Diseases	4	1	—	1	—	·12
Total	48	1	—	1	—	1·84
Sub-Group II.—Malarial Fevers	20	—	—	—	—	·42
Sub-Group III.—Septic Diseases	8	—	—	—	—	·33
Sub-Group IV. Syphilis, Primary	96	—	—	—	—	7·57
" Secondary	92	—	—	—	7	5·48
Gonorrhœa	251	—	—	—	—	13·02
Total	439	—	—	—	7	26·07
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—
GROUP "B."						
Sub-Group I.—Parasitic Diseases	1	—	—	—	—	·06
Sub-Group II. Scurvy	3	—	—	—	—	·23
Alcoholism	6	—	—	—	—	·19
GROUP "C."						
Debility, &c.	18	—	—	—	7	1·22
GROUP "D."						
Rheumatism	84	—	1	1	3	5·43
Tubercular Diseases	14	2	—	2	8	1·14
Other Diseases	10	3	—	3	—	·42
II.—LOCAL DISEASES.						
Diseases of the—						
1. Nervous System, Nervous Diseases	30	1	—	1	6	1·90
Mental "	3	—	—	—	1	·35
2. Eye	26	—	—	—	2	1·13
3 & 4. Other Organs of Special Senses	15	1	—	1	—	·37
5. Circulatory System	29	2	—	2	14	2·05
6. Respiratory "	184	2	—	2	8	7·93
7. Digestive "	334	1	—	1	3	7·50
8. Lymphatic and Glandular System	22	—	—	—	—	1·47
9. Urinary System	9	—	—	—	1	·50
10. Generative "	98	—	—	—	4	5·13
11. Organs of Locomotion	25	—	—	—	7	1·62
12. Connective Tissue	99	—	—	—	—	2·79
13. Skin	218	—	—	—	—	7·28
III.—POISONS	—	—	—	—	—	—
IV.—INJURIES.						
1. General	2	2	—	2	1	·28
2. Local	372	1	—	1	—	14·00
3. In Action	—	—	—	—	—	—
No appreciable disease	7	—	—	—	—	·18
Cause unknown (refers to deaths only)	—	—	—	—	—	—
General Total	2,124	16	1	17	72	91·83

---

* The average ratios for 10 years will be given in future years. The average ratios years 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK, Year 1892, with the Ratios per 1,000 of the Strength.

Ratio per 1,000.				*Average Ratio per 1,000 from 1886 to 1891.			
Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.	Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.
—	—	—	—	—	—	—	·01
3·2	—	—	·27	5·1	—	—	·27
·3	—	—	·03	·9	·18	—	·14
8·1	—	—	·16	7·4	—	—	·18
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
·3	—	—	·01	·1	—	·04	·01
1·1	·27	—	·03	10·9	·04	—	·23
13·0	·27	—	·50	24·5	·22	·04	·84
5·4	—	—	·11	2·1	—	—	·05
2·2	—	—	·09	3·3	·09	—	·16
25·9	—	—	2·04	32·7	—	—	2·63
24·8	—	1·89	1·48	33·9	·04	·89	2·46
67·7	—	—	3·51	72·3	—	·13	3·51
118·4	—	1·89	7·03	138·9	·04	1·03	8·60
—	—	—	—	—	—	—	—
·3	—	—	·02	·8	—	—	·01
·8	—	—	·06	·2	—	·04	·01
1·6	—	—	·05	4·0	—	—	·09
4·9	—	1·89	·33	5·0	—	1·12	·35
22·7	·27	·81	1·47	28·7	—	1·34	1·61
3·8	·54	2·16	·31	3·1	·80	1·21	·45
2·7	·81	—	·11	3·7	·13	·22	·17
8·1	·27	1·62	·51	6·1	·22	·89	·37
·8	—	·27	·09	2·2	—	·89	·29
7·0	—	·54	·30	10·4	—	·94	·54
4·0	·27	—	·10	6·1	—	·94	·29
7·8	·54	3·77	·55	10·2	·49	4·29	·84
49·7	·54	2·16	2·14	61·4	1·88	2·01	2·91
90·1	·27	·81	2·02	93·4	·36	1·52	2·32
5·9	—	—	·40	10·0	·04	·04	·69
2·4	—	·27	·13	2·5	·22	·22	·18
26·4	—	1·08	1·39	41·0	·04	·18	2·16
6·8	—	1·89	·44	8·2	—	·76	·48
26·7	—	—	·75	27·0	·04	·18	·93
58·8	—	—	1·97	81·7	—	·18	2·65
—	—	—	—	·2	·13	·04	—
·5	·54	·27	·08	·4	·45	·09	·04
100·4	·27	—	3·78	104·7	·49	·98	3·58
—	—	—	—	—	—	—	—
1·9	—	—	·05	2·9	—	—	·06
—	—	—	—	—	—	—	—
573·1	4·59	19·43	24·73	682·7	5·67	19·16	30·66

for the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight that for 1894, &c., &c.

ABSTRACT C.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in IRELAND during the

Average Strength in Annual Returns, 25,180. † Average Strength, including Men detached, 26,320. Diseases.	Admissions into Hospital.	Died. With the Regiment.	Died. Absent from Regiment.	Died. Total.	Invalids Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.						
GROUP "A."						
Sub-Group I. Small-pox	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	196	1	—	1	—	9·72
Sub-Group I. Enteric Fever	47	8	—	8	—	8·58
Sub-Group I. Other Continued Fevers	94	2	—	2	—	3·82
Sub-Group I. Yellow Fever	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—
Sub-Group I. Dysentery	3	—	—	—	2	·50
Sub-Group I. Other Diseases	272	—	—	—	—	10·77
Total	612	11	—	11	2	33·39
Sub-Group II.—Malarial Fevers	94	—	—	—	—	3·31
Sub-Group III.—Septic Diseases	29	—	—	—	—	2·06
Sub-Group IV. Syphilis, Primary	1,349	—	—	—	—	127·00
Sub-Group IV. „ Secondary	628	1	—	1	12	61·98
Sub-Group IV. Gonorrhœa	2,014	—	—	—	3	141·71
Total	3,991	1	—	1	15	330·69
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—
GROUP "B."						
Sub-Group I.—Parasitic Diseases	4	—	—	—	—	·06
Sub-Group II. Scurvy	3	—	—	—	—	·16
Sub-Group II. Alcoholism	53	1	—	1	—	1·55
GROUP "C."						
Debility, &c.	189	—	—	—	19	13·89
GROUP "D."						
Rheumatism	800	—	—	—	9	48·48
Tubercular Diseases	80	13	1	14	36	13·16
Other Diseases	120	2	—	2	7	9·05
II.—LOCAL DISEASES.						
Diseases of the—						
1. Nervous System Nervous Diseases	189	5	1	6	32	13·01
1. Nervous System Mental „	38	—	—	—	18	7·28
2. Eye	272	—	—	—	12	17·56
3 & 4. Other Organs of Special Senses	195	—	—	—	15	11·85
5. Circulatory System	238	11	1	12	64	20·22
6. Respiratory „	1,921	32	4	36	28	91·11
7. Digestive „	2,529	6	—	6	19	76·70
8. Lymphatic and Glandular System	334	—	—	—	6	33·65
9. Urinary System	67	2	—	2	8	6·11
10. Generative „	650	—	—	—	11	36·97
11. Organs of Locomotion	226	—	—	—	18	15·59
12. Connective Tissue	592	—	—	—	—	22·95
13. Skin	1,649	—	—	—	7	68·05
III.—POISONS	5	—	—	—	—	·23
IV.—INJURIES.						
1. General	2	8	1	9	—	·14
2. Local	2,676	11	—	11	22	105·06
3. In Action	—	—	—	—	—	—
No appreciable disease	93	—	—	—	—	3·26
Cause unknown (refers to deaths only)	—	—	—	—	—	—
General Total	17,651	103	8	111	348	985·52

---

* The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1893 in

† Ratios of death and invalids calculated on this strength.

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK Year 1892, with the Ratios per 1,000 of the Strength.

Ratio per 1,000.				*Average Ratio per 1,000 from 1886 to 1891.			
Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.	Admissions.	Deaths.	Invalids Discharged the Service.	Constantly Sick.
—	—	—	—	—	—	—	—
7·8	·04	—	·39	3·2	·03	—	·18
1·9	·30	—	·34	2·6	·57	—	·41
3·7	·07	—	·15	8·6	—	—	·30
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
·1	—	·07	·02	·3	·03	·04	·03
10·8	—	—	·43	13·5	·03	—	·30
24·3	·42	·07	1·33	28·2	·66	·04	1·22
3·7	—	—	·13	2·6	·01	·01	·08
1·2	—	—	·08	1·7	·04	·01	·10
53·6	—	—	5·04	60·9	—	—	5·44
24·9	·04	·46	2·46	31·4	·06	·68	2·74
80·0	—	·11	5·63	93·2	—	·03	6·01
158·5	·04	·57	13·13	185·5	·06	·71	14·19
—	—	—	—	—	—	—	—
·2	—	—	—	·4	—	—	·01
·1	—	—	·01	·2	·01	—	·01
2·1	·04	—	·06	2·5	·02	—	·07
7·5	—	·72	·55	7·6	·02	1·03	·53
31·8	—	·34	1·93	32·7	·03	·56	1·99
3·2	·53	1·37	·52	3·3	·90	1·53	·53
4·8	·07	·27	·36	5·2	·09	·29	·38
7·5	·23	1·22	·52	6·8	·31	1·06	·46
1·5	—	·68	·29	1·8	·02	1·12	·30
10·8	—	·46	·70	12·5	—	·53	·73
7·6	—	·57	·47	6·6	·01	·60	·37
9·4	·46	2·43	·80	8·2	·36	2·29	·73
76·3	1·37	1·06	3·62	58·7	1·16	·79	3·00
100·4	·23	·72	3·05	90·7	·28	·74	2·65
13·3	—	·23	1·34	17·0	—	·07	1·71
2·7	·07	·30	·24	2·0	·15	·22	·17
25·8	—	·42	1·47	38·7	·02	·18	2·17
9·0	—	·68	·62	7·5	·04	·74	·59
23·5	—	—	·91	22·8	—	·07	1·02
65·5	—	·27	2·70	74·5	—	·21	2·80
·2	—	—	·01	·1	·03	·01	—
·1	·34	—	—	·1	·43	·01	·01
106·3	·42	·84	4·17	100·4	·31	·60	3·96
—	—	—	—	—	—	·01	—
3·7	—	—	·13	2·1	—	—	·06
—	—	—	—	—	—	—	—
701·0	4·22	13·22	39·14	720·4	4·96	13·43	39·84

the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT D.—TABLE showing the AVERAGE STRENGTH, SICKNESS, UNITED KINGDOM in 1892, with

Average Strength.	Officers, 4,008.			
Diseases.	Attacks of Illness.	Deaths.	Ratios per 1,000.	
			Attacks.	Deaths.
I.—GENERAL DISEASES.				
GROUP "A."				
Sub-Group I. Small-pox	1	—	·3	—
Sub-Group I. Other Eruptive Fevers	24	—	6·0	—
Sub-Group I. Enteric Fever	10	1	2·5	·25
Sub-Group I. Other Continued Fevers	32	—	8·0	—
Sub-Group I. Yellow Fever	—	—	—	—
Sub-Group I. Cholera	—	—	—	—
Sub-Group I. Dysentery	7	1	1·7	·25
Sub-Group I. Other Diseases	216	1	53·9	·25
Total	290	3	72·4	·75
Sub-Group II.—Malarial Fevers	48	—	12·0	—
Sub-Group III.—Septic Diseases	3	1	·7	·25
Sub-Group IV. Syphilis, Primary	5	—	1·3	—
Sub-Group IV. „ Secondary	—	—	—	—
Sub-Group IV. Gonorrhœa	36	—	9·0	—
Total	41	—	10·3	—
Sub-Group V.—Hydrophobia, &c.	—	—	—	—
GROUP "B."				
Sub-Group I.—Parasitic Diseases	—	—	—	—
Sub-Group II. Scurvy	—	—	—	—
Sub-Group II. Alcoholism	—	—	—	—
GROUP "C."				
Debility, &c.	16	—	4·0	—
GROUP "D."				
Rheumatism	80	—	20·0	—
Tubercular Diseases	1	—	·3	—
Other Diseases	5	1	1·3	·25
II.—LOCAL DISEASES.				
Diseases of the—				
1. Nervous System: Nervous Diseases	25	2	6·2	·50
1. Nervous System: Mental „	4	—	1·0	—
2. Eye	24	—	6·0	—
3 & 4. Other Organs of Special Senses	8	—	2·0	—
5. Circulatory System	6	—	1·5	—
6. Respiratory „	253	1	63·1	·25
7. Digestive „	235	2	58·6	·50
8. Lymphatic and Glandular System	17	—	4·2	—
9. Urinary System	19	3	4·7	·75
10. Generative „	27	—	6·7	—
11. Organs of Locomotion	43	—	10·7	—
12. Connective Tissue	33	—	8·2	—
13. Skin	56	—	14·0	—
III.—POISONS	2	3	·5	·75
IV.—INJURIES.				
1. General	—	1	—	·25
2. Local	273	2	68·1	·50
3. In Action	—	—	—	—
No appreciable disease	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—
General Total	1,509	19	376·5	4·74

and MORTALITY among the OFFICERS, WOMEN, and CHILDREN in the the Ratios per 1,000 of the Strength.

Women, 10,216.				Children, 20,392.			
Attacks of Illness.	Deaths.	Ratios per 1,000.		Attacks of Illness.	Deaths.	Ratios per 1,000.	
		Attacks.	Deaths.			Attacks.	Deaths.
—	—	—	—	—	—	—	—
41	—	4·0	—	2,081	43	102·1	2·11
10	—	1·0	—	21	—	1·0	—
55	—	5·4	—	172	4	8·4	·19
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
8	—	·8	—	10	1	·5	·05
413	2	40·4	·19	1,081	25	53·0	1·23
527	2	51·6	·19	3,365	73	165·0	3·58
53	—	5·2	—	38	—	1·9	—
17	5	1·7	·49	13	5	·6	·24
2	—	·2	—	—	—	—	—
24	—	2·3	—	29	4	1·4	·19
1	—	·1	—	—	—	—	—
27	—	2·6	—	29	4	1·4	·19
—	—	—	—	—	—	—	—
6	—	·6	—	59	—	2·9	—
—	—	—	—	—	—	—	—
3	—	·3	—	—	—	—	—
618	1	60·5	·10	454	43	22·3	2·11
199	1	19·5	·10	50	—	2·5	—
50	10	4·9	·98	41	19	2·0	·93
163	5	16·0	·49	104	1	5·1	·05
201	3	19·7	·29	270	72	13·2	3·53
5	1	·5	·10	—	—	—	—
40	—	3·9	—	237	—	11·6	—
16	—	1·6	—	112	—	5·5	—
40	5	4·8	·49	12	3	·6	·15
730	11	71·5	1·08	3,151	120	154·5	5·88
1,057	3	103·5	·29	2,369	54	116·2	2·65
24	1	2·3	·10	110	1	5·4	·05
27	—	2·6	—	23	2	1·1	·10
525	1	51·3	·10	29	—	1·4	—
23	1	2·2	·10	26	3	1·3	·15
77	—	7·5	—	191	1	9·4	·05
111	—	10·9	—	703	1	34·5	·05
1	—	·1	—	2	—	·1	—
—	2	—	·19	5	11	·2	·54
78	—	7·6	—	455	2	22·3	·10
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
4,627	52	452·9	5·09	11,848	415	581·0	20·35

ABSTRACT No. II.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed at GIBRALTAR during the Year 1892, with the Ratios

Average Strength, 4,936. Diseases.	Admissions into Hospital.	Deaths. In the Command.	Deaths. Of Invalids.	Deaths. Total.	Invalids. Number sent Home.	Invalids. Number finally Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	4	—	—	—	—	—	·36
Sub-Group I. Enteric Fever	25	4	—	4	5	—	4·77
Sub-Group I. Other Continued Fevers	78	—	—	—	3	—	7·48
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—	—
Sub-Group I. Dysentery	—	—	—	—	—	—	—
Sub-Group I. Other Diseases	—	—	—	—	—	—	·19
Total	107	4	—	4	8	—	12·80
Sub-Group II.—Malarial Fevers	8	—	—	—	—	—	·21
Sub-Group III.—Septic Diseases	—	—	—	—	—	—	—
Sub-Group IV. Syphilis, Primary	189	—	—	—	—	—	15·19
Sub-Group IV. „ Secondary	103	—	—	—	3	—	11·45
Sub-Group IV. Gonorrhœa	732	—	—	—	—	—	58·18
Total	1,024	—	—	—	3	—	84·82
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	3	—	—	—	—	—	·08
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	19	—	—	—	—	—	·80
GROUP "C."							
Debility, &c.	13	—	1	1	2	6	1·24
GROUP "D."							
Rheumatism	116	—	—	—	1	—	7·35
Tubercular Diseases	11	—	—	—	7	8	2·36
Other Diseases	36	1	—	1	3	1	2·63
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System. Nervous Diseases	39	1	—	1	4	6	2·45
1. Nervous System. Mental „	5	—	—	—	4	5	1·02
2. Eye	51	—	—	—	5	4	5·51
3 & 4. Other Organs of Special Senses	67	—	—	—	7	5	5·69
5. Circulatory System	15	1	—	1	2	4	·95
6. Respiratory „	134	1	1	2	4	—	8·78
7. Digestive „	356	2	—	2	2	1	11·42
8. Lymphatic and Glandular System	59	—	—	—	1	1	7·83
9. Urinary System	13	—	—	—	1	1	·88
10. Generative „	381	—	—	—	—	—	27·43
11. Organs of Locomotion	48	—	—	—	3	3	3·98
12. Connective Tissue	108	—	—	—	1	—	4·72
13. Skin	285	—	—	—	1	—	12·74
III.—POISONS	—	—	—	—	—	—	—
IV.—INJURIES.							
1. General	1	2	—	2	—	—	·17
2. Local	459	2	—	2	3	2	21·92
3. In Action	—	—	—	—	—	—	—
No appreciable disease	6	—	—	—	—	—	·26
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	3,364	14	2	16	62	47	228·04
* Average of 10 years, 1882-91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1896 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
·8	—	—	—	·07	·5	—	—	—	·03
5·1	·81	1·01	—	·96	12·5	2·01	4·47	—	2·20
15·8	—	·61	—	1·52	28·5	·07	4·14	·04	3·56
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·4	·04	—	—	·63
—	—	—	—	·04	27·5	·04	—	—	·46
21·7	·81	1·62	—	2·59	69·4	2·16	8·61	·04	6·28
1·6	—	—	—	·04	1·3	·04	·07	·07	·05
—	—	—	—	—	·7	·07	—	—	·03
38·3	—	—	—	3·08	33·7	—	—	—	3·33
20·9	—	·61	—	2·32	29·7	·11	·86	·29	2·50
148·3	—	—	—	11·79	103·2	—	—	—	6·07
207·5	—	·61	—	17·18	166·6	·11	·86	·29	11·90
—	—	—	—	—	—	—	—	—	—
·6	—	—	—	·02	·6	—	—	—	·01
—	—	—	—	—	—	—	—	—	—
3·9	—	—	—	·16	5·7	·04	—	—	·15
2·6	·20	·41	1·22	·25	5·1	—	1·59	1·15	·38
23·5	—	·20	—	1·49	32·2	—	1·55	·30	1·97
2·2	—	1·42	1·62	·48	2·0	·43	1·59	·94	·33
7·3	·20	·61	·20	·53	2·6	·18	·32	·21	·22
7·9	·20	·81	1·22	·50	4·3	·25	·65	·61	·29
1·0	—	·81	1·01	·21	·6	—	·58	·47	·14
10·3	—	1·01	·81	1·12	11·6	—	·54	·58	·79
13·6	—	1·42	1·01	1·15	5·9	—	·29	·25	·32
3·0	·20	·41	·81	·19	1·9	·32	·68	·72	·20
27·2	·41	·81	—	1·78	26·3	·54	·83	·54	1·36
72·1	·41	·41	·20	2·31	78·1	·29	·25	·11	2·13
12·0	—	·20	·20	1·59	9·3	—	·11	·11	·99
2·6	—	·20	·20	·18	·9	·21	·21	·11	·10
77·2	—	—	—	5·56	91·4	·04	—	·04	5·90
9·7	—	·61	·61	·81	4·0	·04	·47	·29	·37
21·9	—	·20	—	·96	16·7	—	·07	·07	·84
57·7	—	·20	—	2·58	38·4	—	—	·07	1·34
—	—	—	—	—	·1	·04	—	—	—
·2	·41	—	—	·03	·2	·21	·04	·04	·03
93·0	·41	·61	·41	4·43	101·0	·43	·36	·32	4·10
—	—	—	—	—	—	—	—	—	—
1·2	—	—	—	·05	2·5	—	—	—	·08
—	—	—	—	—	—	—	—	—	—
681·5	3·24	12·56	9·52	46·19	679·4	5·40	19·67	7·42	40·39
779·8	6·03	22·79	8·61	46·73	—	—	—	—	—

the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. III.—Table showing the Average Strength, Admissions
the Troops stationed at Malta during the Year 1892, with the Ratios

Average Strength, 7,847.		Deaths.			Invalids.		
Diseases.	Admissions into Hospital.	In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	3	—	—	—	—	—	·12
Sub-Group I. Enteric Fever	74	25	—	25	7	1	7·94
Sub-Group I. Other Continued Fevers	1,369	11	3	14	55	1	105·63
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—	—
Sub-Group I. Dysentery	15	—	—	—	1	—	1·00
Sub-Group I. Other Diseases	35	1	—	1	—	—	1·24
Total	1,496	37	3	40	63	2	115·93
Sub-Group II.—Malarial Fevers	8	—	—	—	1	—	·31
Sub-Group III.—Septic Diseases	3	—	—	—	—	—	·27
Sub-Group IV. Syphilis, Primary	131	—	—	—	—	—	12·38
Sub-Group IV. „ Secondary	146	—	—	—	5	—	15·14
Sub-Group IV. Gonorrhœa	656	—	—	—	—	—	45·41
Total	933	—	—	—	5	—	72·93
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	8	—	—	—	—	—	·13
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	20	—	—	—	—	—	·57
GROUP "C."							
Debility, &c.	79	—	—	—	9	5	7·18
GROUP "D."							
Rheumatism	199	—	—	—	2	3	15·48
Tubercular Diseases	16	3	1	4	6	11	1·92
Other Diseases	31	1	—	1	2	1	2·55
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System, Nervous Diseases	52	1	—	1	9	10	3·68
1. Nervous System, Mental „	32	—	—	—	25	26	5·83
2. Eye	78	—	—	—	4	4	4·26
3 & 4. Other Organs of Special Senses	93	—	—	—	7	13	5·37
5. Circulatory System	48	1	2	3	13	13	4·32
6. Respiratory „	222	6	—	6	7	—	14·72
7. Digestive „	615	7	—	7	6	3	22·49
8. Lymphatic and Glandular System	57	—	—	—	—	—	6·88
9. Urinary System	13	—	—	—	7	4	2·40
10. Generative „	344	—	1	1	3	5	21·45
11. Organs of Locomotion	44	—	—	—	3	4	3·18
12. Connective Tissue	202	—	—	—	1	—	8·60
13. Skin	338	—	—	—	1	1	16·92
III.—POISONS	2	1	—	1	—	—	·20
IV.—INJURIES.							
1. General	2	3	—	3	—	—	·33
2. Local	715	1	—	1	7	5	32·05
3. In Action	—	—	—	—	—	—	—
No appreciable disease	36	—	—	—	—	—	1·89
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	5,686	61	7	68	181	110	371·84
*Average of 10 years, 1882–91	—	—	—	—	—	—	—

---

† The average ratios for 10 years will be given in future years. The average ratios
1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
·4	—	—	—	·01	·4	—	—	—	·02
9·4	3·19	·89	·13	1·01	5·1	1·87	·71	·13	1·02
174·5	1·78	7·01	·13	13·46	98·8	1·06	3·20	—	8·17
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	·03	—	—	—
1·9	—	·13	—	·13	5·1	·26	·18	·08	·43
4·4	·13	—	—	·16	5·2	·05	·03	—	·14
190·6	5·10	8·03	·25	14·77	114·6	3·27	4·12	·21	9·78
1·0	—	·13	—	·04	2·1	·24	·08	—	·16
·4	—	—	—	·03	·6	·03	—	—	·04
16·7	—	—	—	1·58	16·9	—	—	—	1·78
18·6	—	·64	—	1·93	13·7	·03	·45	·32	1·31
83·6	—	—	—	5·78	55·3	—	·08	—	3·90
118·9	—	·64	—	9·29	85·9	·03	·53	·32	6·99
—	—	—	—	—	—	—	—	—	—
1·0	—	—	—	·02	1·4	—	—	·03	·03
—	—	—	—	—	—	—	—	—	—
2·5	—	—	—	·07	2·7	·03	·03	—	·10
10·1	—	1·15	·64	·92	11·6	—	1·19	·90	1·09
25·4	—	·25	·38	1·97	27·3	·10	1·00	·58	1·98
2·0	·51	·76	1·40	·24	2·6	·82	1·72	1·43	·42
3·9	·13	·25	·13	·32	3·4	·05	·08	·21	·20
6·6	·13	1·15	1·27	·47	6·7	·21	·77	·92	·45
4·1	—	3·19	3·31	·74	1·5	·08	1·27	1·35	·31
9·9	—	·51	·51	·54	10·5	—	·42	·34	·62
11·9	—	·89	1·66	·68	10·5	—	·90	·69	·68
6·1	·38	1·66	1·66	·55	8·2	·21	1·66	1·66	·72
28·3	·76	·89	—	1·88	20·7	·50	1·58	·77	1·70
78·4	·89	·76	·38	2·87	84·1	·55	·63	·18	2·90
7·3	—	—	—	·88	6·1	—	·16	·05	·55
1·7	—	·89	·51	·31	2·2	·03	·61	·42	·20
43·8	·13	·38	·64	2·73	40·7	—	·50	·37	2·99
5·6	—	·38	·51	·41	6·1	·03	·48	·34	·49
25·7	—	·13	—	1·10	25·3	·03	·08	·03	·97
43·1	—	·13	·13	2·16	38·0	—	·21	·03	1·85
·3	·13	—	—	·03	·1	·05	—	—	—
·3	·38	—	—	·04	·5	·55	·03	—	·03
91·1	·13	·89	·64	4·08	84·8	·29	·66	·45	3·89
—	—	—	—	—	—	—	—	—	—
4·6	—	—	—	·24	1·6	—	—	—	·07
—	—	--	—	—	—	—	—	—	—
724·6	8·67	23·06	14·02	47·38	599·8	7·10	18·65	11·28	39·21
676·3	8·18	21·96	12·32	44·37	—	—	—	—	—

---

for the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. IIIa.—Table showing the Average Strength, Admissions the Royal Malta Artillery stationed at Malta during the Year 1892,

Average Strength, 371.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
Group "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	—	—	—	—	—	—	—
Sub-Group I. Enteric Fever	—	—	—	—	—	—	—
Sub-Group I. Other Continued Fevers	22	—	—	—	—	—	·53
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—	—
Sub-Group I. Dysentery	—	—	—	—	—	—	—
Sub-Group I. Other Diseases	—	—	—	—	—	—	—
Total	22	—	—	—	—	—	·53
Sub-Group II.—Malarial Fevers	—	—	—	—	—	—	—
Sub-Group III.—Septic Diseases	—	—	—	—	—	—	—
Sub-Group IV. Syphilis, Primary	3	—	—	—	—	—	·19
Sub-Group IV. " Secondary	3	—	—	—	—	—	·14
Sub-Group IV. Gonorrhœa	9	—	—	—	—	—	·93
Total	15	—	—	—	—	—	1·26
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
Group "B."							
Sub-Group I.—Parasitic Diseases	1	—	—	—	—	—	·01
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	—	—	—	—	—	—	—
Group "C."							
Debility, &c.	12	—	—	—	—	2	·61
Group "D."							
Rheumatism	9	—	—	—	—	1	·40
Tubercular Diseases	3	—	—	—	—	2	·18
Other Diseases	1	—	—	—	—	—	·03
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System: Nervous Diseases	—	—	—	—	—	—	—
1. Nervous System: Mental "	1	—	—	—	—	1	·28
2. Eye	9	—	—	—	—	—	·88
3 & 4. Other Organs of Special Senses	—	—	—	—	—	—	—
5. Circulatory System	5	—	—	—	—	1	·22
6. Respiratory "	26	—	—	—	—	—	1·28
7. Digestive "	10	—	—	—	—	—	·14
8. Lymphatic and Glandular System	2	—	—	—	—	—	·15
9. Urinary System	1	—	—	—	—	—	·09
10. Generative "	4	—	—	—	—	—	·14
11. Organs of Locomotion	2	—	—	—	—	2	·07
12. Connective Tissue	2	—	—	—	—	—	·03
13. Skin	24	—	—	—	—	—	·88
III.—POISONS.							
IV.—INJURIES.							
1. General	—	—	—	—	—	—	—
2. Local	48	—	—	—	—	—	1·02
3. In Action	—	—	—	—	—	—	—
No appreciable disease	—	—	—	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	197	—	—	—	—	9	8·20
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among with the Ratios per 1,000 of the Strength and the average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·9	—	—	—	·04
—	—	—	—	—	·4	·46	—	—	—
59·3	—	—	—	1·43	61·1	—	—	—	2·44
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·4	·46	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	13·3	—	—	—	·30
59·3	—	—	—	1·43	76·2	·92	—	—	2·79
—	—	—	—	—	1·8	—	—	—	·03
—	—	—	—	—	1·4	—	—	—	·06
8·1	—	—	—	·51	11·5	—	—	—	·89
8·1	—	—	—	·38	8·3	—	—	·46	·85
24·2	—	—	—	2·51	33·5	—	—	·46	2·82
40·4	—	—	—	3·40	53·3	—	—	·92	4·56
—	—	—	—	—	—	—	—	—	—
2·7	—	—	—	·03	·4	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
32·3	—	—	5·39	1·65	16·1	—	—	3·67	1·03
24·2	—	—	2·70	1·08	25·3	—	—	—	·91
8·1	—	—	5·39	·48	1·4	—	—	·92	·41
2·7	—	—	—	·08	6·0	—	—	·46	·33
—	—	—	—	—	6·0	—	—	·46	·18
2·7	—	—	2·70	·75	—	—	—	—	—
24·2	—	—	—	2·37	23·9	—	—	·92	1·02
—	—	—	—	—	9·2	—	—	·46	·26
13·5	—	—	2·70	·59	3·7	·46	—	1·38	·43
70·1	—	—	—	3·45	71·7	—	—	·92	3·24
27·0	—	—	—	·38	96·9	—	—	·92	2·00
5·4	—	—	—	·40	3·2	—	—	—	·08
2·7	—	—	—	·24	2·3	—	—	·46	·13
10·8	—	—	—	·38	6·0	—	—	—	·18
5·4	—	—	5·39	·19	6·4	—	—	1·83	·39
5·4	—	—	—	·08	14·2	—	—	—	·39
64·7	—	—	—	2·37	67·5	—	—	—	1·89
—	—	—	—	—	—	—	—	—	—
129·4	—	—	—	2·75	137·3	·92	—	·92	4·15
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·4	—	—	—	·02
—	—	—	—	—	—	—	—	—	—
531·0	—	—	24·26	22·10	630·6	2·30	—	14·24	24·48
655·2	3·67	—	14·70	24·45	—	—	—	—	—

for the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. IV.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed at CYPRUS during the Year 1892, with the Ratios

Average Strength, 531.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	—	—	—	—	—	—	—
Sub-Group I. Enteric Fever	—	—	—	—	—	—	—
Sub-Group I. Other Continued Fevers	55	—	—	—	—	—	3·08
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—	—
Sub-Group I. Dysentery	1	—	—	—	—	—	·02
Sub-Group I. Other Diseases	3	—	—	—	—	—	·15
Total	59	—	—	—	—	—	3·25
Sub-Group II.—Malarial Fevers	7	—	—	—	—	—	·18
Sub-Group III.—Septic Diseases	1	—	—	—	—	—	·02
Sub-Group IV. Syphilis, Primary	9	—	—	—	—	—	·42
Sub-Group IV. " Secondary	13	—	—	—	4	—	·94
Sub-Group IV. Gonorrhœa	73	—	—	—	—	—	4·49
Total	95	—	—	—	4	—	5·85
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	—	—	—	—	—	—	—
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	—	—	—	—	—	—	—
GROUP "C."							
Debility, &c.	32	—	—	—	11	—	2·02
GROUP "D."							
Rheumatism	5	—	—	—	—	—	·21
Tubercular Diseases	1	—	—	—	1	—	·05
Other Diseases	2	—	—	—	—	—	·15
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System { Nervous Diseases	1	—	—	—	—	—	·08
1. Nervous System { Mental "	—	—	—	—	—	—	—
2. Eye	8	—	—	—	1	1	·41
3 & 4. Other Organs of Special Senses	2	—	—	—	—	—	·13
5. Circulatory System	11	1	1	2	7	—	·52
6. Respiratory "	9	—	—	—	—	—	·63
7. Digestive "	29	2	—	2	—	1	·76
8. Lymphatic and Glandular System	19	—	—	—	—	—	1·99
9. Urinary System	5	—	—	—	1	1	·29
10. Generative "	23	—	—	—	—	—	1·71
11. Organs of Locomotion	6	—	—	—	2	1	·94
12. Connective Tissue	14	—	—	—	—	—	·39
13. Skin	22	—	—	—	—	—	·63
III.—POISONS.	—	—	—	—	—	—	—
IV.—INJURIES.							
1. General	—	—	—	—	—	—	—
2. Local	28	—	—	—	—	—	·78
3. In Action	—	—	—	—	—	—	—
No appreciable disease	1	—	—	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	380	3	1	4	27	4	20·99
* Average of 10 years, 1882-91	—	—	—	—	—	—	—

---

† The average ratios for 10 years will be given in future years. The average ratios years 1886 to 1893 in

into Hospital, Deaths, Numbers Invalided and Constantly Sick among per 1,000 of the Strength and the average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·5	—	—	—	·05
—	—	—	—	—	6·6	2·12	1·06	—	1·17
103·6	—	—	—	5·80	66·9	—	—	—	2·14
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
1·9	—	—	—	·04	14·3	·26	—	—	·82
5·6	—	—	—	·28	8·8	—	—	—	·21
111·1	—	—	—	6·12	97·1	2·39	1·06	—	4·39
13·2	—	—	—	·34	67·1	·26	·53	—	1·83
1·9	—	—	—	·04	1·9	—	—	—	·09
16·9	—	—	—	·79	91·0	—	—	—	8·05
24·5	—	7·53	—	1·77	44·0	—	·79	·26	3·87
137·5	—	—	—	8·46	93·1	—	—	—	5·36
178·9	—	7·53	—	11·02	228·2	—	·79	·26	17·28
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1·3	—	—	—	·02
—	—	—	—	—	·8	—	—	—	·06
—	—	—	—	—	2·9	·26	—	—	·17
60·2	—	20·72	—	3·80	14·3	—	2·65	·26	1·08
9·4	—	—	—	·40	21·5	—	—	—	1·16
1·9	—	1·88	—	·09	·3	·26	·26	·53	·16
3·8	—	—	—	·28	1·9	—	—	·26	·13
1·9	—	—	—	·15	2·6	·26	1·33	1·06	·18
—	—	—	—	—	·8	—	·79	·53	·25
15·1	—	1·88	1·88	·77	9·5	—	·26	·26	·46
3·8	—	—	—	·24	3·2	·26	·26	·53	·17
20·7	3·77	13·18	—	·98	·8	·26	·26	·26	·17
16·9	—	—	—	1·19	14·1	·26	·53	·53	·75
54·6	3·77	—	1·88	1·43	85·4	·26	·53	·26	3·31
35·8	—	—	—	3·75	26·0	—	—	·26	2·93
9·4	—	1·88	1·88	·55	1·1	—	—	—	·03
43·3	—	—	—	3·22	57·8	—	—	·26	4·08
11·3	—	3·77	1·88	1·77	6·9	—	·53	·53	·46
26·4	—	—	—	·73	25·7	—	·26	—	1·32
41·4	—	—	—	1·19	42·7	—	—	—	1·67
—	—	—	—	—	·5	·26	—	—	·03
—	—	—	—	—	·3	—	—	—	·01
52·7	—	—	—	1·47	81·2	·26	·26	·26	3·44
—	—	—	—	—	—	—	—	—	—
1·9	—	—	—	—	·3	—	—	—	·02
—	—	—	—	—	—	—	—	—	—
715·6	7·53	50·84	7·53	39·53	796·2	5·04	10·34	6·10	45·60
829·2	8·68	13·66	5·46	42·26	—	—	—	—	—

for the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight that for 1894, &c., &c.

ABSTRACT No. V.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed in CANADA during the Year 1892, with the

Average Strength, 1,392. Diseases	Admissions into Hospital.	Deaths. In the Command.	Deaths. Of Invalids.	Deaths. Total.	Invalids. Number sent Home.	Invalids. Number finally Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Other Eruptive Fevers	4	—	—	—	—	—	·21
Enteric Fever	—	—	—	—	—	—	—
Other Continued Fevers	—	—	—	—	—	—	·03
Yellow Fever	1	—	—	—	—	—	·11
Cholera	—	—	—	—	—	—	—
Dysentery	—	—	—	—	—	—	—
Other Diseases	8	—	—	—	—	—	·16
Total	13	—	—	—	—	—	·51
Sub-Group II.—Malarial Fevers	9	—	—	—	—	—	·39
Sub-Group III.—Septic Diseases	1	—	—	—	—	—	·06
Sub-Group IV. Syphilis, Primary	24	—	—	—	—	—	1·83
„ Secondary	16	—	—	—	—	—	1·42
Gonorrhœa	62	—	—	—	—	—	2·38
Total	102	—	—	—	—	—	5·63
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	—	—	—	—	—	—	—
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Alcoholism	6	—	—	—	—	—	·17
GROUP "C."							
Debility, &c.	1	—	—	—	1	—	·20
GROUP "D."							
Rheumatism	28	—	—	—	1	—	1·27
Tubercular Diseases	1	—	1	1	—	3	·05
Other Diseases	7	—	—	—	—	—	·21
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System Nervous Diseases	10	—	—	—	2	1	·51
Mental „	—	—	—	—	—	—	—
2. Eye	4	—	—	—	—	1	·13
3 & 4. Other Organs of Special Senses	6	—	—	—	—	—	·15
5. Circulatory System	7	1	—	1	2	1	·67
6. Respiratory „	44	—	—	—	—	—	1·44
7. Digestive „	127	—	—	—	—	—	2·91
8. Lymphatic and Glandular System	28	—	—	—	—	—	2·08
9. Urinary System	3	—	—	—	2	1	·48
10. Generative „	35	—	—	—	—	—	1·16
11. Organs of Locomotion	14	—	—	—	2	1	1·56
12. Connective Tissue	18	—	—	—	—	—	·65
13. Skin	47	—	—	—	—	—	1·25
III.—POISONS	2	—	—	—	—	—	·04
IV.—INJURIES.							
1. General	—	—	—	—	—	—	—
2. Local	117	—	—	—	—	—	3·97
3. In Action	—	—	—	—	—	—	—
No appreciable disease	1	—	—	—	—	—	·02
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	631	1	1	2	10	8	25·51
*Average of 10 years 1882–91	—	—	—	—	—	—	—

---

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1893 in that

into Hospital, Deaths, Numbers Invalided and Constantly Sick among
Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
2·9	—	—	—	·15	1·1	—	—	—	·04
—	—	—	—	—	2·2	·25	·12	—	·43
—	—	—	—	·02	3·7	—	—	—	·17
·7	—	—	—	·08	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
5·7	—	—	—	·11	6·9	—	—	—	·24
9·3	—	—	—	·37	13·9	·25	·12	—	·88
6·5	—	—	—	·28	·4	—	—	--	·01
·7	—	—	—	·04	3·0	—	—	—	·16
17·2	—	—	—	1·31	28·2	—	—	—	1·97
11·5	—	—	—	1·02	25·2	—	·86	·74	2·20
44·5	—	—	—	1·71	65·8	—	—	—	3·61
73·3	—	—	—	4·04	119·2	—	·86	·74	7·78
—	—	—	—	—	—	—	—	—	—
—	—	—	—	--	·2	—	—	—	—
—	—	—	—	—	—	—	—	—	—
4·3	—	—	—	·12	1·9	—	—	—	·06
·7	—	·72	—	·14	3·3	—	1·23	·86	·22
20·1	—	·72	—	·91	32·5	—	·62	·12	2·25
·7	·72	—	2·15	·04	2·0	·74	1·23	1·11	·25
5·0	—	—	—	·15	3·2	—	·49	·86	·23
7·2	—	1·44	·72	·37	9·5	·62	2·59	2·09	·85
—	—	—	—	—	·6	·12	·49	·49	·14
2·9	—	—	·72	·09	9·9	—	·62	·86	·44
4·3	—	—	—	·11	6·8	—	·74	·86	·58
5·0	·72	1·44	·72	·48	11·7	·49	2·59	2·95	1·10
31·6	—	—	—	1·03	37·9	·74	1·48	1·60	2·51
91·2	—	—	—	2·09	67·2	·37	·37	·25	1·70
20·1	—	—	—	1·50	13·3	—	—	—	1·41
2·2	--	1·44	·72	·35	3·2	·25	·74	·25	·37
25·2	—	—	—	·83	25·6	—	·37	·25	1·26
10·1	—	1·44	·72	1·12	8·0	—	·86	·49	·68
12·9	—	—	—	·47	20·3	—	·25	—	·93
33·8	—	—	—	·90	35·7	—	·12	·37	1·44
1·4	—	—	—	·03	·2	·25	—	—	—
—	—	—	—	—	·2	·62	—	—	·02
84·1	—	—	—	2·85	67·5	·49	·74	·62	3·02
—	—	—	—	—	—	—	—	—	—
·7	—	—	—	·01	1·5	—	—	—	·07
—	—	—	—	—	—	—	—	—	—
453·3	1·44	7·18	5·75	18·32	498·7	4·92	16·50	14·77	28·36
602·1	5·09	20·52	17·79	33·22	—	—	—	—	--

the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years
for 1894, &c., &c.

ABSTRACT No. VI.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the TROOPS stationed at BERMUDA during the Year 1892, with the Ratios

Average Strength, 1,363. Diseases.	Admissions into Hospital.	Deaths. In the Command.	Deaths. Of Invalids.	Deaths. Total.	Invalids. Number sent Home.	Invalids. Number finally Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	—	—	—	—	—	—	—
Sub-Group I. Enteric Fever	22	6	—	6	—	—	3·15
Sub-Group I. Other Continued Fevers	15	—	—	—	—	—	·75
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—	—
Sub-Group I. Dysentery	—	—	—	—	—	—	—
Sub-Group I. Other Diseases	—	—	—	—	—	—	—
Total	37	6	—	6	—	—	3·90
Sub-Group II.—Malarial Fevers	2	—	—	—	—	—	·05
Sub-Group III.—Septic Diseases	—	—	—	—	—	—	—
Sub-Group IV. Syphilis, Primary	9	—	—	—	—	—	·70
Sub-Group IV. „ Secondary	12	—	—	—	2	1	2·28
Sub-Group IV. Gonorrhœa	19	—	—	—	—	—	1·68
Total	40	—	—	—	2	1	4·66
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	2	—	—	—	—	—	·04
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	12	—	—	—	—	—	·36
GROUP "C."							
Debility, &c.	11	—	—	—	2	2	·66
GROUP "D."							
Rheumatism	32	—	—	—	—	—	1·61
Tubercular Diseases	1	—	1	1	1	—	·18
Other Diseases	8	—	—	—	—	—	·46
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System, Nervous Diseases	9	—	—	—	—	—	·30
1. Nervous System, Mental „	1	—	—	—	2	—	·46
2. Eye	12	—	—	—	1	—	·55
3 & 4. Other Organs of Special Senses	14	—	—	—	—	—	·59
5. Circulatory System	13	1	—	1	2	1	·77
6. Respiratory „	27	1	—	1	—	—	1·81
7. Digestive „	136	—	—	—	—	—	3·21
8. Lymphatic and Glandular System	8	—	—	—	—	—	1·09
9. Urinary System	2	—	—	—	—	—	·12
10. Generative „	16	—	—	—	—	—	·60
11. Organs of Locomotion	25	—	1	1	1	—	1·93
12. Connective Tissue	26	—	—	—	1	—	1·00
13. Skin	65	—	—	—	—	—	2·26
III.—POISONS	—	—	—	—	—	—	—
IV.—INJURIES.							
1. General	—	—	—	—	—	—	—
2. Local	186	2	—	2	3	2	7·94
3. In Action	—	—	—	—	—	—	—
No appreciable disease	3	—	—	—	—	—	·08
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	688	10	2	12	15	6	34·75
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1893

into **Hospital, Deaths, Numbers Invalided** and **Constantly Sick** among per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
16·1	4·40	—	—	2·31	39·2	6·20	—	—	4·87
11·0	—	—	—	·55	27·6	—	—	—	1·18
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1·4	·25	·12	·12	·11
—	—	—	—	—	6·1	—	—	—	·12
27·1	4·40	—	—	2·86	74·3	6·45	·12	·12	6·28
1·5	—	—	—	·03	·5	—	—	—	·01
—	—	—	—	—	·1	—	—	—	—
6·6	—	—	—	·52	17·0	—	—	—	1·51
8·8	—	1·47	·73	1·67	22·6	—	·73	·61	1·80
13·9	—	—	—	1·23	19·9	—	—	—	1·28
29·3	—	1·47	·73	3·42	59·5	—	·73	·61	4·59
—	—	—	—	—	—	—	—	—	—
1·5	—	—	—	·03	·5	—	—	—	·01
—	—	—	—	—	—	—	—	—	—
8·8	—	—	—	·26	8·4	·12	—	—	·26
8·0	—	1·47	1·47	·49	13·1	—	1·58	·73	·84
23·5	—	—	—	1·18	18·6	—	·73	·61	1·11
·7	·73	·73	—	·13	2·4	·73	1·58	1·58	·86
5·9	—	—	—	·31	4·2	—	·25	—	·35
6·6	—	—	—	·15	7·1	·61	·73	·38	·35
·7	—	1·47	—	·35	1·6	—	·97	·97	·23
8·8	—	·73	—	·62	13·9	—	·65	·73	·72
10·3	—	—	—	·43	8·5	—	·61	·85	·40
9·5	·73	1·47	·73	·57	9·7	·49	2·19	1·95	·72
19·8	·73	—	—	1·33	28·2	·61	1·95	1·46	1·57
99·8	—	—	—	2·35	106·4	·36	1·46	·97	3·18
5·9	—	—	—	·73	14·6	—	·12	·25	1·24
1·5	—	—	—	·09	2·0	·12	·12	—	·09
11·7	—	—	—	·51	19·7	—	·12	·12	1·04
18·3	·73	·73	—	1·42	9·4	—	1·34	1·22	·75
19·1	—	·73	—	·73	31·1	—	—	—	·98
47·9	—	—	—	1·65	58·0	—	·12	—	1·98
—	—	—	—	—	·4	·12	—	—	·03
—	—	—	—	—	1·2	·49	—	—	·12
136·4	1·47	2·20	1·47	5·83	106·3	·49	·85	·48	·83
—	—	—	—	—	—	—	—	—	—
2·2	—	—	—	·02	3·6	—	—	—	·07
—	—	—	—	—	—	—	—	—	—
504·8	8·80	11·00	4·40	25·49	603·3	10·58	16·42	13·01	31·11
600·6	10·11	15·67	9·83	31·41	—	—	—	—	—

---

the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years in that for 1894, &c., &c.

ABSTRACT No. VII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS
the WHITE TROOPS stationed in the WEST INDIES during the Year 1892, with

Average Strength, 1,201.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	1	—	—	—	—	—	·38
	Enteric Fever	5	3	—	3	1	—	·73
	Other Continued Fevers	47	—	—	—	—	—	2·02
	Yellow Fever	3	1	—	1	—	—	·14
	Cholera	—	—	—	—	—	—	—
	Dysentery	3	—	—	—	1	—	·34
	Other Diseases	8	—	—	—	—	—	·37
	Total	67	4	--	4	2	—	4·00
Sub-Group II.—Malarial Fevers		62	1	—	1	1	—	2·54
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	Syphilis, Primary	53	—	—	—	—	—	4·68
	„ Secondary	58	—	—	—	3	—	7·35
	Gonorrhœa	199	—	—	—	—	—	16·74
	Total	310	—	—	—	3	—	28·77
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		1	—	—	—	—	—	·03
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	11	—	—	—	—	—	·31
GROUP "C."								
Debility, &c.		20	—	—	—	2	2	1·86
GROUP "D."								
Rheumatism		55	—	—	—	1	1	3·62
Tubercular Diseases		2	—	1	1	2	2	·70
Other Diseases		9	1	—	1	—	1	·90
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System	Nervous Diseases	21	1	—	1	3	2	1·52
	Mental „	—	—	—	—	1	1	·17
2. Eye		15	—	—	—	2	3	1·12
3 & 4. Other Organs of Special Senses		25	—	—	—	5	2	2·26
5. Circulatory System		10		—	2	5	4	1·70
6. Respiratory „		37	—	—	—	1	—	1·76
7. Digestive „		100	1	—	1	4	2	4·34
8. Lymphatic and Glandular System		54	—	—	—	3	2	7·22
9. Urinary System		1	—	—	—	—	—	·01
10. Generative „		131	—	—	—	—	—	8·83
11. Organs of Locomotion		11	—	—	—	2	2	·83
12. Connective Tissue		66	—	—	—	—	—	2·42
13. Skin		98	—	—	—	—	—	4·56
III.—POISONS		2	—	—	—	—	—	·09
IV.—INJURIES.								
1. General		—	—	—	—	—	—	—
2. Local		140	1	—	1	1	—	6·00
3. In Action		—	—	—	—	—	—	—
No appreciable disease		8	—	—	—	—	—	·11
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		1,256	11	1	12	38	24	85·68
* Average of 10 Years 1882–91		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the
1886 to 1893, in that

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
·8	—	—	—	·32	7·4	—	—	—	·16
4·2	2·50	·83	—	·62	12·5	2·30	—	—	1·81
39·1	—	—	—	1·68	111·1	·31	—	—	3·91
2·5	·83	—	—	·12	1·2	·92	—	—	·03
—	—	—	—	—	—	—	—	—	—
2·5	—	·83	—	·28	8·4	·77	·15	—	·42
6·7	—	—	—	·31	10·0	—	—	—	·21
55·8	3·33	1·67	—	3·33	150·6	4·30	·15	—	6·54
51·6	·83	·83	—	2·11	44·4	1·23	·46	—	2·07
—	—	—	—	—	·8	—	—	—	·05
44·1	—	—	—	3·90	40·9	—	—	—	3·38
48·3	—	2·50	—	6·12	33·2	·31	2·30	1·08	3·28
165·7	—	—	—	13·94	146·0	—	·31	—	9·93
258·1	—	2·50	—	23·96	220·1	·31	2·61	1·08	16·59
—	—	—	—	—	—	—	—	—	—
·8	—	—	—	·02	1·7	—	—	—	·04
—	—	—	—	—	—	—	—	—	—
9·1	—	—	—	·26	7·7	—	—	—	·20
16·6	—	1·67	1·67	1·55	14·9	—	2·15	1·08	·86
45·8	—	·83	·83	3·01	35·5	·15	·92	·46	1·92
1·7	·83	1·67	1·67	·58	1·2	·15	·92	·77	·19
7·5	·83	—	·83	·75	6·3	—	·31	·15	·43
17·5	·83	2·50	·67	1·26	13·1	·31	2·00	1·69	·20
—	—	·83	·83	·14	·8	—	·46	·77	·16
12·5	—	1·67	2·50	·93	14·8	—	·77	·62	·88
20·8	—	4·16	1·67	1·88	20·3	—	·15	·46	·60
8·3	1·67	4·16	3·33	1·42	12·0	·31	1·85	1·85	·83
30·8	—	·83	—	1·47	33·7	1·08	·46	·92	1·67
83·3	·83	3·33	1·67	3·61	115·4	·31	1·38	·92	3·12
45·0	—	2·50	1·67	6·01	40·9	—	·15	·15	3·93
·8	—	—	—	·01	1·8	·31	·15	·15	·09
109·1	—	—	—	7·35	114·3	—	·31	·31	7·75
9·1	—	1·67	1·67	·69	7·4	·15	1·23	·46	·63
55·0	—	—	—	2·02	35·8	—	—	·15	1·45
81·6	—	—	—	3·80	82·8	—	·46	·15	3·12
1·7	—	—	—	·07	·3	—	—	—	—
—	—	—	—	—	·3	·15	—	—	·09
116·6	·83	·83	—	5·00	155·6	·77	·62	·46	5·17
—	—	—	—	—	—	—	—	—	—
6·7	—	—	—	·09	4·4	—	—	—	·09
—	—	—	—	—	—	·15	—	—	—
1045·8	10·00	31·64	20·00	71·32	1136·9	9·68	17·52	12·60	59·37
1059·3	10·10	21·65	12·37	54·85	—	—	—	—	—

---

seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years for 1894, &c., &c.

ABSTRACT No. VIII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS the BLACK TROOPS stationed in the WEST INDIES during the Year 1892, with

Average Strength, 1,305.			Deaths.			Invalids.		
Diseases.		Admissions into Hospital.	In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.								
GROUP "A."								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	20	—	—	—	—	—	1·41
	Enteric Fever	14	8	—	8	—	—	·99
	Other Continued Fevers	161	1	—	1	—	—	5·91
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	18	1	—	1	—	1	1·40
	Other Diseases	14	—	—	—	—	—	·46
	Total	227	10	—	10	—	1	10·17
Sub-Group II.—Malarial Fevers		133	2	—	2	—	2	4·95
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	Syphilis, Primary	110	—	—	—	—	—	11·19
	„ Secondary	68	—	—	—	—	3	7·84
	Gonorrhœa	196	—	—	—	—	—	14·29
	Total	374	—	—	—	—	3	33·23
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		—	—	—	—	—	—	—
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	—	—	—	—	—	—	—
GROUP "C."								
Debility, &c.		14	—	—	—	—	6	1·11
GROUP "D."								
Rheumatism		84	—	—	—	—	1	3·75
Tubercular Diseases		9	3	—	3	—	6	·97
Other Diseases		6	—	—	—	—	3	·23
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System	Nervous Diseases	9	—	—	—	—	—	·89
	Mental „	—	—	—	—	—	1	·15
2. Eye		33	—	—	—	—	2	2·95
3 & 4. Other Organs of Special Senses		17	—	—	—	—	—	·87
5. Circulatory System		11	—	—	—	—	3	·86
6. Respiratory „		78	5	—	5	—	2	5·75
7. Digestive „		95	—	—	—	—	—	3·42
8. Lymphatic and Glandular System		78	—	—	—	—	—	7·14
9. Urinary System		6	1	—	1	—	1	·45
10. Generative „		194	—	—	—	—	3	14·29
11. Organs of Locomotion		6	—	—	—	—	1	·54
12. Connective Tissue		28	—	—	—	—	—	1·40
13. Skin		177	—	—	—	—	—	6·71
III.—POISONS		2	—	—	—	—	—	·11
IV.—INJURIES.								
1. General		—	1	—	1	—	—	—
2. Local		97	—	—	—	—	1	3·84
3. In Action		—	—	—	—	—	—	—
No appreciable disease		12	—	—	—	—	—	·25
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		1,690	22	—	22	—	36	104·22
* Average of 10 years, 1882–91		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	·1	—	—	—	·02
15·3	—	—	—	1·08	16·7	—	—	—	·83
10·7	6·13	—	—	·76	1·7	·72	—	—	·14
123·4	·77	—	—	4·53	115·5	·44	—	—	3·83
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
13·8	·77	—	·77	1·07	13·7	·44	—	·14	·72
10·7	—	—	—	·35	14·4	—	—	—	·30
173·9	7·66	—	·77	7·79	162·1	1·60	—	·14	5·84
101·9	1·53	—	1·53	3·79	124·2	2·18	—	·29	3·42
—	—	—	—	—	·6	—	—	—	·03
84·3	—	—	—	8·58	98·0	—	—	—	9·20
52·1	—	—	2·30	6·01	43·7	·14	—	5·38	3·68
150·2	—	—	—	10·88	175·6	—	—	·14	10·08
286·6	—	—	2·30	25·47	317·3	·14	—	5·52	22·96
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·6	—	—	—	·01
—	—	—	—	—	·1	—	—	—	·01
—	—	—	—	—	·1	—	—	—	—
10·7	—	—	4·59	·85	8·4	—	—	3·92	·63
64·4	—	—	·77	2·87	66·7	—	—	3·05	3·75
6·9	2·30	—	4·59	·74	7·7	2·76	—	5·52	1·22
4·6	—	—	2·30	·55	6·1	·14	—	4·21	·90
6·9	—	—	—	·63	12·6	·44	—	3·34	·85
—	—	—	·77	·12	1·4	—	—	1·60	·40
25·3	—	—	1·53	2·26	28·5	—	—	2·62	1·97
13·0	—	—	—	·44	5·4	·14	—	·73	·48
8·4	—	—	2·30	·66	15·1	1·31	—	4·50	1·46
59·8	3·83	—	1·53	4·41	53·0	2·76	—	1·89	3·48
72·8	—	—	—	2·62	73·2	1·16	—	2·03	2·03
59·8	—	—	—	5·47	48·4	—	—	1·31	4·05
4·6	·77	—	·77	·35	2·5	·44	—	·87	·29
148·7	—	—	2·30	10·95	138·0	—	—	2·18	10·41
4·6	—	—	·77	·41	11·0	—	—	3·34	·80
21·5	—	—	—	1·07	35·7	—	—	·14	1·79
135·6	—	—	—	5·14	74·4	—	—	·87	3·14
1·5	—	—	—	·09	—	—	—	—	—
—	·77	—	—	—	·7	·58	—	—	·61
74·3	—	—	·77	2·94	87·6	·29	—	·87	2·89
—	—	—	—	—	—	—	—	—	—
9·2	—	—	—	·19	8·3	—	—	—	·15
—	—	—	—	—	—	—	—	—	—
1295·0	16·86	—	27·59	79·86	1289·7	13·94	—	48·94	72·97
1170·9	13·65	—	43·40	67·55	—	—	—	—	—

---

the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. IX.—Table showing the Average Strength, Admissions among the Black Troops stationed at West Africa during the Year 1892,

Average Strength, 948. Diseases.	Admissions into Hospital.	Deaths. In the Command.	Deaths. Of Invalids.	Deaths. Total.	Invalids. Number sent to West Indies.	Invalids. Number finally Discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.							
Group "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Other Eruptive Fevers	—	—	—	—	—	—	—
Enteric Fever	1	1	—	1	—	—	·66
Other Continued Fevers	5	—	—	—	—	—	·42
Yellow Fever	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—
Dysentery	19	1	—	1	—	—	·63
Other Diseases	41	1	—	1	—	—	1·89
Total	66	3	—	3	—	—	3·00
Sub-Group II.—Malarial Fevers	1165	20	—	20	1	—	34·60
Sub-Group III.—Septic Diseases	—	—	—	—	--	—	—
Sub-Group IV. Syphilis, Primary	61	—	—	—	—	—	5·40
„ Secondary	38	—	—	—	7	1	3·12
Gonorrhœa	145	—	—	—	—	—	6·68
Total	244	—	—	—	7	1	15·20
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
Group "B."							
Sub-Group I.—Parasitic Diseases	2	—	—	—	—	—	·03
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Alcoholism	2	—	—	—	—	—	·03
Group "C."							
Debility, &c.	24	—	—	—	1	—	1·48
Group "D."							
Rheumatism	110	—	—	—	4	1	6·92
Tubercular Diseases	11	5	—	5	2	—	1·20
Other Diseases	5	—	—	—	3	1	·55
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System, Nervous Diseases	12	1	—	1	1	1	1·00
Mental „	1	—	—	—	—	1	·10
2. Eye	21	—	—	—	1	—	·93
3 & 4. Other Organs of Special Senses	14	—	—	—	1	--	1·21
5. Circulatory System	26	—	—	—	4	1	1·91
6. Respiratory „	76	4	—	4	—	1	3·66
7. Digestive „	103	1	—	1	—	—	3·75
8. Lymphatic and Glandular System	38	—	—	—	--	—	3·28
9. Urinary System	5	2	—	2	1	—	·36
10. Generative „	50	—	—	—	2	—	3·77
11. Organs of Locomotion	7	—	—	—	1	—	·35
12. Connective Tissue	31	—	—	—	—	—	1·58
13. Skin	122	—	—	—	—	—	6·19
III.—POISONS.	—	—	—	—	—	--	—
IV.—INJURIES.							
1. General	1	2	—	2	—	—	·01
2. Local	108	1	—	1	—	—	6·24
3. In Action	13	1	—	1	3	—	1·60
No appreciable disease	—	—	—	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	2257	40	—	40	32	7	98·96
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios 1886 to 1893 in that

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK with the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent to West Indies.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent to West Indies.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	5·4	—	—	—	·13
1·0	1·05	—	—	·06	·6	·30	—	—	·09
5·3	—	—	—	·44	11·2	—	—	—	·11
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
20·0	1·05	—	—	·66	27·5	·60	·60	—	1·85
43·3	1·05	—	—	1·99	12·7	—	—	—	·33
69·6	3·16	—	—	3·16	57·4	·91	·60	—	2·51
1228·9	21·10	1·05	—	36·50	856·1	6·05	·91	—	20·98
—	—	—	—	—	1·8	·30	—	—	·01
64·3	—	—	—	5·69	56·2	—	·30	—	5·26
40·1	—	7·38	1·05	3·29	43·2	—	3·91	1·51	4·64
153·0	—	—	—	7·05	150·5	—	—	—	8·98
257·4	—	7·38	1·05	16·03	250·0	—	4·21	1·51	18·88
—	—	—	—	—	—	—	—	—	—
2·1	—	—	—	·03	4·8	—	—	—	·05
—	—	—	—	—	—	—	—	—	—
2·1	—	—	—	·03	·6	—	—	—	·03
25·3	—	1·05	—	1·56	26·9	—	11·40	—	1·98
116·0	—	4·22	1·05	7·30	87·4	—	4·53	·91	5·81
11·6	5·27	2·11	—	1·27	7·6	3·91	2·72	·60	·94
5·3	—	3·16	1·05	·58	3·6	·30	2·12	—	·17
12·7	1·05	1·05	1·05	1·05	10·0	·91	·91	—	·61
1·0	—	—	1·05	·11	1·8	—	·30	·30	·10
22·2	—	1·05	—	·98	27·8	—	·91	·30	1·74
14·8	—	1·05	—	1·28	5·2	—	—	—	·23
27·4	—	4·22	1·05	2·01	16·3	1·21	1·51	—	·96
80·2	4·22	—	1·05	3·86	56·5	2·42	·30	—	2·92
106·7	1·05	—	—	3·96	65·0	·60	·30	·30	2·13
40·1	—	—	—	3·46	62·6	—	1·51	—	5·66
5·3	2·11	1·05	—	·38	8·2	2·42	·30	—	·71
52·7	—	2·11	—	3·98	81·9	—	·30	—	5·89
7·4	—	1·05	—	·37	13·9	·30	2·42	1·21	1·73
32·7	—	—	—	1·67	42·0	—	—	—	2·16
128·7	—	—	—	6·53	154·2	—	·30	—	6·99
—	—	—	—	—	—	—	—	—	—
1·0	2·11	—	—	·01	·3	·30	—	—	·01
113·9	1·05	—	—	6·58	72·0	·60	·30	—	2·65
13·7	1·05	3·16	—	1·69	3·3	·30	—	—	·07
—	—	—	—	—	2·1	—	—	—	·13
—	—	—	—	—	—	—	—	—	—
2380·8	42·19	33·75	7·38	104·38	1919·3	20·55	35·97	5·14	86·05
1718·6	20·97	26·96	6·36	76·95	—	—	—	—	—

---

for the seven years 1886 to 1892 will be given in the Report for 1893, those for the eight years for 1894 &c., &c.

ABSTRACT No. X.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed at SOUTH AFRICA and ST. HELENA average Ratios for 10 Years.*

Average Strength, 3209. Diseases.	Admissions into Hospital.	Deaths. In the Command.	Deaths. Of Invalids.	Deaths. Total.	Invalids. Number sent Home.	Invalids. Number finally discharged the Service.	Average Number constantly Sick.
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I.							
Small-pox	—	—	—	—	—	—	—
Other Eruptive Fevers	5	—	—	—	—	—	·12
Enteric Fever	33	5	—	5	—	—	5·01
Other Continued Fevers	167	—	—	—	—	—	6·67
Yellow Fever	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—
Dysentery	13	1	—	1	—	—	·81
Other Diseases	145	—	—	—	—	—	4·63
Total	363	6	—	6	—	—	17·24
Sub-Group II.—Malarial Fevers	253	—	—	—	—	—	7·88
Sub-Group III.—Septic Diseases	3	—	—	—	—	—	·18
Sub-Group IV.							
Syphilis, Primary	186	—	—	—	—	—	18·68
„ Secondary	220	—	—	—	21	1	25·91
Gonorrhœa	317	—	—	—	1	1	23·75
Total	723	—	—	—	22	2	68·34
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	7	—	—	—	—	—	·13
Sub-Group II.							
Scurvy	—	—	—	—	—	—	—
Alcoholism	2	—	—	—	—	—	·12
GROUP "C."							
Debility, &c.	45	—	—	—	17	4	3·59
GROUP "D."							
Rheumatism	95	1	—	1	1	—	4·13
Tubercular Diseases	4	—	2	2	7	7	2·21
Other Diseases	13	—	—	—	3	1	1·35
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System, Nervous Diseases	29	1	—	1	10	7	2·10
1. Nervous System, Mental „	5	1	—	1	4	4	1·58
2. Eye	50	—	—	—	4	2	2·52
3 & 4. Other Organs of Special Senses	48	—	—	—	8	5	3·81
5. Circulatory System	21	—	—	—	7	9	2·13
6. Respiratory „	117	2	—	2	5	1	5·85
7. Digestive „	425	1	—	1	4	2	12·86
8. Lymphatic and Glandular System	47	—	—	—	—	—	3·48
9. Urinary System	8	—	—	—	2	2	·94
10. Generative „	130	—	—	—	3	2	8·23
11. Organs of Locomotion	24	—	—	—	1	2	2·12
12. Connective Tissue	116	—	—	—	—	—	4·46
13. Skin	194	—	—	—	1	—	7·73
III.—POISONS	3	1	—	1	—	—	·09
IV.—INJURIES.							
1. General	3	1	—	1	—	—	·09
2. Local	377	2	—	2	4	1	16·16
3. In Action	—	—	—	—	—	—	—
No appreciable disease	6	—	—	—	—	—	·27
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	3,111	16	2	18	103	51	179·59
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK during the Year 1892, with the Ratios per 1,000 of the Strength, and the

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
1·6	—	—	—	·04	·9	—	—	—	·06
10·3	1·56	—	—	1·56	7·9	1·79	—	—	1·14
52·0	—	—	—	2·08	35·0	·05	—	—	1·68
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
4·0	·31	—	—	·25	6·7	·14	·77	·10	·70
45·2	—	—	—	1·44	1·2	—	—	—	·03
113·1	1·87	—	—	5·37	51·7	1·98	·77	·10	3·61
78·8	—	—	—	2·46	9·6	·04	·05	—	·39
·9	—	—	—	·06	2·0	—	·05	—	·12
58·0	—	—	—	5·82	96·8	—	—	—	7·64
68·5	—	6·54	·31	8·07	58·0	·39	2·85	1·88	4·92
98·8	—	·31	·31	7·40	92·4	—	·24	·05	6·07
225·3	—	6·85	·62	21·29	247·2	·39	3·09	1·93	18·63
—	—	—	—	—	—	—	—	—	—
2·2	—	—	—	·04	2·2	—	—	·14	·04
—	—	—	—	—	—	—	—	—	—
·6	—	—	—	·04	4·3	—	·05	—	·11
14·0	—	5·30	1·25	1·12	15·7	—	3·72	1·49	1·68
29·6	·31	·31	—	1·29	44·1	·10	2·03	·68	3·39
1·2	·62	2·18	2·18	·69	2·9	·58	1·30	1·11	·53
4·1	—	·93	·31	·42	4·8	·10	·53	·34	·38
9·0	·31	3·12	2·18	·65	8·1	·58	1·50	1·40	·60
1·6	·31	1·25	1·25	·49	1·2	·10	·97	·97	·26
15·6	—	1·25	·62	·79	17·4	—	1·25	1·11	1·33
15·0	—	2·49	1·56	1·19	6·0	·04	·48	·53	·46
6·5	·62	2·17	2·80	·66	11·9	·24	4·01	2·41	1·57
36·5	·31	1·56	·31	1·82	23·1	·58	1·35	·82	1·74
132·5	—	1·25	·62	4·01	83·3	·53	1·59	·92	3·26
14·7	—	—	—	1·08	38·3	—	·14	·14	3·69
2·5	—	·62	·62	·29	3·8	·10	·43	·24	·25
40·5	—	·93	·62	2·56	50·1	—	·39	·39	3·22
7·5	—	·31	·62	·66	7·4	·04	·58	·68	·56
36·1	—	—	—	1·39	26·6	—	·05	—	1·17
60·5	—	·31	—	2·41	58·8	—	·29	·14	2·67
·9	·31	—	—	·03	·2	—	—	—	—
·9	·31	—	—	·03	1·8	1·01	·29	·05	·12
117·5	·62	1·25	·31	5·04	100·9	·58	1·01	·72	4·47
—	—	—	—	—	—	·10	—	·10	—
1·9	—	—	—	·08	1·7	—	—	—	·08
—	—	—	—	—	—	—	—	—	—
969·5	5·61	32·08	15·89	55·96	825·1	7·09	25·92	16·41	54·51
789·3	8·58	30·62	18·89	52·87	—	—	—	—	—

the seven years, 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. XI.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed at MAURITIUS during the Year 1892, with

Average Strength, 560.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	1	—	—	—	—	—	·01
Sub-Group I. Enteric Fever	8	3	—	3	—	—	·89
Sub-Group I. Other Continued Fevers	—	—	—	—	—	—	—
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—
Sub-Group I. Cholera	—	—	—	—	—	—	—
Sub-Group I. Dysentery	7	—	—	—	—	—	·41
Sub-Group I. Other Diseases	1	—	—	—	—	—	·02
Total	17	3	—	3	—	—	1·33
Sub-Group II.—Malarial Fevers	245	—	1	1	12	1	8·35
Sub-Group III.—Septic Diseases	—	—	—	—	—	—	—
Sub-Group IV. Syphilis, Primary	27	—	—	—	—	—	1·78
Sub-Group IV. „ Secondary	17	—	—	—	4	1	·76
Sub-Group IV. Gonorrhœa	26	—	—	—	—	—	1·07
Total	70	—	—	—	4	1	3·61
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	1	—	—	—	—	—	·01
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	—	—	—	—	—	—	—
GROUP "C."							
Debility, &c.	1	—	—	—	—	1	·06
GROUP "D."							
Rheumatism	3	—	—	—	—	—	·04
Tubercular Diseases	1	1	1	2	—	—	·04
Other Diseases	5	—	—	—	—	—	·11
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System, Nervous Diseases	6	1	—	1	—	—	·11
1. Nervous System, Mental „	1	—	—	—	1	1	·22
2. Eye	12	—	—	—	4	1	·59
3 & 4. Other Organs of Special Senses	5	—	—	—	1	1	·23
5. Circulatory System	7	—	—	—	1	—	·31
6. Respiratory „	13	—	—	—	—	—	64
7. Digestive „	76	3	—	3	3	—	2·48
8. Lymphatic and Glandular System	18	—	—	—	—	—	1·73
9. Urinary System	1	—	—	—	1	1	·38
10. Generative „	26	—	—	—	—	—	1·36
11. Organs of Locomotion	5	—	—	—	—	—	·40
12. Connective Tissue	11	—	—	—	—	—	·28
13. Skin	28	—	—	—	—	—	1·22
III.—POISONS.	—	—	—	—	—	—	—
IV.—INJURIES.							
1. General	—	—	—	—	—	—	—
2. Local	43	—	—	—	1	1	1·38
3. In Action	—	—	—	—	—	—	—
No appreciable disease	2	—	—	—	—	—	·06
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	597	8	2	10	28	8	24·94
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

---

† The average ratios for 10 years will be given in future years. The average ratios for 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000, from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	·3	—	—	—	·05
1·8	—	—	—	·02	1·1	—	—	—	·12
14·3	5·36	—	—	1·60	15·9	4·93	·35	—	1·75
—	—	—	—	—	2·8	1·41	—	—	·14
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
12·5	—	—	—	·73	29·9	1·41	·70	—	1·78
1·8	—	—	—	·08	1·1	—	—	—	·02
30·4	5·36	—	—	2·37	51·1	7·75	1·06	—	3·86
437·5	1·78	21·43	1·78	14·91	538·6	2·11	14·09	—	23·95
—	—	—	—	—	2·5	·35	—	—	·08
48·2	—	—	—	3·18	42·6	—	—	—	3·54
30·4	—	7·14	1·78	1·36	29·6	—	2·11	·70	2·66
46·4	—	—	—	1·91	124·3	—	—	—	8·18
125·0	—	7·14	1·78	6·45	196·5	—	2·11	·70	14·38
—	—	—	—	—	—	—	—	—	—
1·8	—	—	—	·02	4·2	—	—	·35	·10
—	—	—	—	—	·3	—	—	—	·02
—	—	—	—	—	3·9	·35	—	—	·09
1·8	—	—	1·78	·11	17·3	—	8·10	2·47	·97
5·4	—	—	—	·07	25·0	—	1·41	·35	1·41
1·8	3·57	—	—	·07	2·5	·35	1·41	1·76	·32
8·9	—	—	—	·20	5·3	—	·35	—	·25
10·7	1·78	—	—	·20	10·9	·70	2·47	1·41	·57
1·8	—	1·78	1·78	·39	3·2	·35	2·11	2·47	·48
21·4	—	7·14	1·78	1·05	10·2	—	1·06	1·06	·99
8·9	—	1·78	1·78	·41	9·5	—	·70	·35	·55
12·5	—	1·78	—	·55	21·5	·35	4·23	3·87	1·56
23·2	—	—	—	1·14	20·8	—	1·06	·70	1·35
135·7	5·36	5·36	—	4·43	114·1	1·76	2·11	·70	4·39
32·1	—	—	—	3·09	56·3	—	—	·35	6·35
1·8	—	1·78	1·78	·68	5·3	—	1·76	·70	·49
46·4	—	—	—	2·43	69·7	—	·35	·70	4·63
8·9	—	—	—	·71	4·6	—	—	—	·24
19·6	—	—	—	·50	22·5	—	—	—	·93
50·0	—	—	—	2·18	56·7	—	—	—	2·87
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	1·8	1·41	·35	—	·04
76·8	—	1·78	1·78	2·46	102·8	1·41	—	—	4·32
—	—	—	—	—	—	—	—	—	—
3·6	—	—	—	·11	3·2	—	—	—	·08
—	—	—	—	—	—	—	—	—	—
1066·0	17·86	50·00	14·28	44·53	1360·3	16·91	44·73	17·96	75·27
1691·9	16·86	41·34	15·01	80·37	—	—	—	—	—

the seve years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. XII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS, the Troops stationed at CEYLON during the Year 1892, with the Ratios

Average Strength, 1,261.		Deaths.			Invalids.		Average Number constantly Sick.
Diseases.	Admissions into Hospital.	In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I.							
Small-pox	—	—	—	—	—	—	·04
Other Eruptive Fevers	—	—	—	—	—	—	—
Enteric Fever	10	2	—	2	—	—	1·71
Other Continued Fevers	84	2	—	2	—	—	2·16
Yellow Fever	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—
Dysentery	17	3	—	3	—	—	1·25
Other Diseases	3	—	—	—	—	—	·08
Total	114	7	—	7	—	—	5·24
Sub-Group II.—Malarial Fevers	85	—	—	—	—	—	2·37
Sub-Group III.—Septic Diseases	—	—	—	—	—	—	—
Sub-Group IV.							
Syphilis, Primary	127	—	—	—	—	—	9·63
„ Secondary	40	—	—	—	1	—	3·07
Gonorrhœa	186	—	—	—	—	—	9·28
Total	353	—	—	—	1	—	21·98
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	5	—	—	—	—	—	·08
Sub-Group II.							
Scurvy	—	—	—	—	—	—	—
Alcoholism	3	—	—	—	—	—	·20
GROUP "C."							
Debility, &c.	18	—	—	—	3	2	1·27
GROUP "D."							
Rheumatism	37	—	—	—	—	—	1·48
Tubercular Diseases	4	—	—	—	4	5	·37
Other Diseases	5	—	—	—	—	—	·20
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System — Nervous Diseases	5	—	—	—	—	—	·12
Mental „	—	—	—	—	—	—	—
2. Eye	29	—	—	—	1	—	1·72
3 & 4. Other Organs of Special Senses	39	—	—	—	—	—	·78
5. Circulatory System	12	—	—	—	—	—	·53
6. Respiratory „	37	1	—	1	—	—	1·46
7. Digestive „	149	1	—	1	1	—	5·37
8. Lymphatic and Glandular System	63	—	—	—	—	—	6·68
9. Urinary System	1	—	—	—	—	—	·07
10. Generative „	62	—	—	—	—	—	3·45
11. Organs of Locomotion	5	—	—	—	1	—	·25
12. Connective Tissue	40	—	—	—	—	—	1·53
13. Skin	115	—	—	—	—	—	4·21
III.—POISONS.	—	—	—	—	—	—	—
IV.—INJURIES.							
1. General	—	3	—	3	—	—	—
2. Local	127	—	—	—	—	—	5·04
3. In Action	—	—	—	—	—	—	—
No appreciable disease	12	—	—	—	—	—	·25
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	1,320	12	—	12	11	7	64·65
* Average of 10 years 1882–91	—	—	—	—	—	—	—

---

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK among per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	·08	—	—	—	—	—
—	—	—	—	—	·5	—	—	—	·02
7·9	1·59	—	—	1·36	11·2	4·56	—	—	1·14
66·6	1·59	—	—	1·71	78·6	—	—	—	2·57
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·1	·15	—	—	—
13·5	2·37	—	—	·99	22·5	·61	1·67	·15	1·88
2·4	—	—	—	·06	5·0	—	—	—	·09
90·4	5·55	—	—	4·15	117·9	5·32	1·67	·15	5·70
67·4	—	—	—	1·88	29·8	·30	·46	—	1·06
—	—	—	—	—	·9	—	—	—	·02
100·7	—	—	—	7·64	62·3	—	·15	—	4·79
31·7	—	·79	—	2·43	56·5	—	1·82	1·67	4·38
147·5	—	—	—	7·36	182·3	—	·15	·15	7·10
279·9	—	·79	--	17·43	251·1	—	2·12	1·82	16·27
—	—	—	—	—	—	—	—	—	—
4·0	—	—	—	·06	1·2	—	—	—	·01
—	—	—	—	—	—	—	—	—	—
2·4	—	—	—	·16	4·7	·15	—	—	·14
14·3	—	2·37	1·59	1·01	18·4	—	3·49	1·67	1·13
29·3	—	—	—	1·17	27·6	—	—	—	1·53
3·2	—	3·18	3·96	·29	4·5	1·37	2·58	2·28	·92
4·0	—	—	—	·16	12·9	—	·91	·46	·93
4·0	—	—	—	·09	11·1	·76	1·98	1·52	·72
—	—	—	—	—	2·1	—	1·98	1·98	·78
23·0	—	·79	—	1·36	11·4	—	·76	·91	·61
31·0	—	—	—	·62	14·7	—	·30	·30	·68
9·5	—	—	—	·42	8·6	·91	1·67	·76	·93
29·3	·79	—	—	1·16	24·7	·76	1·37	·45	1·78
118·1	·79	·79	—	4·26	99·6	1·82	1·22	·30	3·84
49·9	—	—	—	5·30	71·8	—	·30	—	7·35
·8	—	—	—	·06	4·4	—	·46	·30	·36
49·2	—	—	—	2·74	127·9	—	·30	—	8·08
4·0	—	·79	—	·20	7·9	—	·91	·76	·67
31·7	—	—	—	1·21	20·3	—	—	—	·82
91·2	—	—	—	3·34	70·8	—	—	—	2·79
—	—	—	—	—	—	—	—	—	—
—	2·37	—	—	—	2·7	1·67	·15	—	·14
100·7	—	—	—	4·00	102·7	·46	·46	·61	3·91
—	—	—	—	—	—	—	—	—	—
9·5	—	—	—	·20	2·9	—	—	—	·04
—	—	—	—	—	—	—	—	—	—
1046·8	9·51	8·72	5·55	51·27	1052·6	13·52	23·09	14·27	61·20
1107·3	12·38	30·86	14·80	61·23	—	—	—	—	—

seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. XIII.—TABLE showing the AVERAGE STRENGTH, ADMISSIONS among the TROOPS stationed in CHINA during the Year 1892, with the

Average Strength, 1,382.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I. Small-pox	—	—	—	—	—	—	—
Other Eruptive Fevers	—	—	—	—	—	—	—
Enteric Fever	1	—	—	—	—	—	·13
Other Continued Fevers	5	—	—	—	—	—	·26
Yellow Fever	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—
Dysentery	8	—	—	—	—	—	·27
Other Diseases	—	—	—	—	—	—	—
Total	14	—	—	—	—	—	·66
Sub-Group II.—Malarial Fevers	660	7	—	7	1	—	17·18
Sub-Group III.—Septic Diseases	2	—	—	—	—	—	·07
Sub-Group IV. Syphilis, Primary	65	—	—	—	—	—	5·41
" Secondary	41	—	—	—	2	1	2·85
Gonorrhœa	194	—	—	—	—	—	13·09
Total	300	—	—	—	2	1	21·35
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group 1.—Parasitic Diseases	1	—	—	—	—	—	·08
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Alcoholism	2	—	—	—	—	—	·08
GROUP "C."							
Debility, &c.	31	—	—	—	—	—	1·44
GROUP "D."							
Rheumatism	18	—	—	—	2	—	1·11
Tubercular Diseases	5	1	—	1	2	2	·70
Other Diseases	10	—	—	—	—	—	·54
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System Nervous Diseases	7	—	—	—	1	1	·27
Mental "	3	—	—	—	—	—	·28
2. Eye	5	—	—	—	—	—	·26
3 & 4. Other Organs of Special Senses	14	—	—	—	—	—	·47
5. Circulatory System	21	2	—	2	3	3	2·01
6. Respiratory "	45	—	—	—	—	—	2·41
7. Digestive "	121	—	—	—	1	1	4·62
8. Lymphatic and Glandular System	36	—	—	—	—	—	2·91
9. Urinary System	3	—	1	1	—	—	·40
10. Generative "	203	1	—	1	—	—	16·15
11. Organs of Locomotion	4	—	—	—	—	—	·16
12. Connective Tissue	25	—	—	—	—	—	·77
13. Skin	97	—	—	—	—	—	3·61
III.—POISONS	1	—	—	—	—	—	·01
IV.—INJURIES.							
1. General	5	1	—	1	—	—	·49
2. Local	128	4	—	4	—	—	5·02
3. In Action	—	—	—	—	—	—	—
No appreciable disease	2	—	—	—	—	—	·11
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	1,763	16	1	17	12	8	83·06
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1893 in

into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK Ratios per 1,000 of the Strength, and the Average Ratios for 10 years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	1·4	—	—	—	·12
—	—	—	—	—	—	—	—	—	—
·7	—	—	—	·09	1·2	·26	·13	—	·16
3·6	—	—	—	·19	12·5	—	—	—	·32
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·4	·39	—	—	—
5·8	—	—	—	·20	15·9	·52	·78	—	·83
—	—	—	—	—	·8	—	—	—	·03
10·1	—	—	—	·48	32·2	1·17	·91	—	1·46
477·6	5·07	·72	—	12·43	438·7	1·95	3·50	·52	10·41
1·4	—	—	—	·05	·1	—	—	—	—
47·0	—	—	—	3·92	26·1	—	—	—	2·56
29·7	—	1·45	·72	2·06	46·2	·13	1·56	·65	3·08
140·4	—	—	—	9·47	108·8	—	—	—	6·92
217·1	—	1·45	·72	15·45	181·1	·13	1·56	·65	12·56
—	—	—	—	—	—	—	—	—	—
·7	—	—	—	·02	·9	—	—	—	·01
—	—	—	—	—	—	·13	—	—	—
1·4	—	—	—	·02	4·0	·13	—	—	·22
22·4	—	—	—	1·05	18·6	—	1·82	1·55	·81
13·0	—	1·45	—	·73	17·8	—	·39	·13	·70
3·6	·72	1·45	1·45	·51	4·4	·78	2·59	·91	·74
7·2	—	—	—	·47	5·6	·26	·13	·26	·49
5·1	—	·72	·72	·20	6·0	·26	·52	·39	·40
2·2	—	—	—	·21	1·1	·13	·52	·65	·26
3·6	—	—	—	·19	8·6	—	·52	·26	·49
10·1	—	—	—	·34	11·9	—	·40	·52	·46
15·2	1·45	2·17	2·17	1·46	12·0	·65	2·46	2·20	·77
32·6	—	—	—	1·75	29·0	·39	1·30	·78	1·55
87·6	—	·72	·72	3·34	96·1	·65	2·20	·65	3·74
26·1	—	—	—	2·11	17·7	—	·26	·13	1·55
2·2	·72	—	—	·28	3·9	—	·26	·13	·35
147·0	·72	—	—	11·62	110·5	—	—	—	7·89
2·9	—	—	—	·12	9·8	—	·91	·78	·69
18·1	—	—	—	·56	24·8	—	·26	·13	1·20
70·2	—	—	—	2·62	47·4	—	·26	—	1·93
·7	—	—	—	·01	·4	—	—	—	—
3·6	2·89	—	—	·36	1·2	1·56	—	—	·08
92·6	·72	—	—	3·64	83·6	1·29	1·04	1·04	3·56
—	—	—	—	—	—	—	—	—	—
1·4	—	—	—	·08	·5	—	—	—	·04
—	—	—	—	—	—	—	—	—	—
1275·7	12·30	8·68	5·79	60·10	1167·9	9·48	21·81	11·68	52·36
1085·5	9·75	29·76	—	51·38	—	—	—	—	—

seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. XIV.—TABLE showing the AVERAGE STRENGTH, ADMIS among the TROOPS stationed in the STRAITS SETTLEMENTS during Ratios for 10 years.*

Average Strength, 1,205.		Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.			In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.								
GROUP "A.".								
Sub-Group I.	Small-pox	—	—	—	—	—	—	—
	Other Eruptive Fevers	1	—	—	—	—	—	·01
	Enteric Fever	10	6	—	6	—	—	·85
	Other Continued Fevers	135	—	—	—	—	—	5·03
	Yellow Fever	—	—	—	—	—	—	—
	Cholera	—	—	—	—	—	—	—
	Dysentery	10	1	—	1	1	—	·69
	Other Diseases	—	—	—	—	—	—	—
	Total	156	7	—	7	1	—	6·58
Sub-Group II.—Malarial Fevers		103	—	—	—	—	—	3·79
Sub-Group III.—Septic Diseases		—	—	—	—	—	—	—
Sub-Group IV.	Syphilis, Primary	174	—	—	—	—	—	14·48
	" Secondary	110	1	—	1	12	2	13·05
	Gonorrhœa	142	—	—	—	1	—	10·24
	Total	426	1	—	1	13	2	37·77
Sub-Group V.—Hydrophobia, &c.		—	—	—	—	—	—	—
GROUP "B."								
Sub-Group I.—Parasitic Diseases		1	—	—	—	—	—	·03
Sub-Group II.	Scurvy	—	—	—	—	—	—	—
	Alcoholism	8	—	—	—	—	—	·34
GROUP "C."								
Debility, &c.		19	—	—	—	—	—	1·12
GROUP "D."								
Rheumatism		19	—	—	—	—	—	1·11
Tubercular Diseases		3	—	1	1	3	—	·74
Other Diseases		2	—	1	1	—	—	·07
II.—LOCAL DISEASES.								
Diseases of the—								
1. Nervous System	Nervous Diseases	14	—	—	—	2	1	·63
	Mental "	2	—	—	—	2	3	·33
2. Eye		9	—	—	—	—	1	·56
3 & 4. Other Organs of Special Senses		12	—	—	—	—	—	·32
5. Circulatory System		8	2	—	2	2	2	·59
6. Respiratory "		43	1	—	1	—	—	2·23
7. Digestive "		114	—	—	—	1	1	3·96
8. Lymphatic and Glandular System		37	—	—	—	—	—	5·25
9. Urinary System		—	—	—	—	—	—	—
10. Generative "		41	—	—	—	—	1	4·04
11. Organs of Locomotion		7	—	—	—	—	—	·47
12. Connective Tissue		38	—	—	—	—	—	1·12
13. Skin		49	—	—	—	—	—	1·96
III.—POISONS		—	—	—	—	—	—	—
IV.—INJURIES.								
1. General		1	—	—	—	—	—	·03
2. Local		96	—	—	—	—	—	4·76
3. In Action		—	—	—	—	—	—	—
No appreciable disease		1	—	—	—	—	1	·02
Cause unknown (refers to deaths only)		—	—	—	—	—	—	—
General Total		1,209	11	2	13	24	12	77·79
* Average of 10 years, 1882-91		—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1893 in

SIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY SICK the Year 1892, with the Ratios per 1,000 of the Strength, and the Average

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
—	—	—	—	—	—	—	—	—	—
·8	—	—	—	·01	·2	—	—	—	·02
8·3	4·98	—	—	·70	2·6	·87	—	—	·39
112·0	—	—	—	4·17	60·6	·15	—	—	2·04
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	·2	·15	—	—	—
8·3	·83	·83	—	·58	8·6	—	1·02	·15	1·10
—	—	—	—	—	·3	—	—	—	·01
129·4	5·81	·83	—	5·46	72·5	1·17	1·02	·15	3·56
85·4	—	—	—	3·14	150·3	—	·15	—	4·53
—	—	—	—	—	—	—	—	—	—
144·4	—	—	—	12·01	74·1	—	—	—	7·01
91·3	·83	9·96	1·66	10·83	88·9	—	3·64	·87	9·51
117·8	—	·83	—	8·50	159·8	—	·29	—	11·81
353·5	·83	10·79	1·66	31·34	322·8	—	3·93	·87	28·33
—	—	—	—	—	·2	·15	—	—	—
·8	—	—	—	·02	3·9	—	—	—	·09
—	—	—	—	—	—	—	—	—	—
6·6	—	—	—	·28	8·3	·44	—	—	·32
15·8	—	—	—	·93	18·4	—	2·33	2·04	2·24
15·8	—	—	—	·92	13·6	—	·44	·29	1·09
2·5	·83	2·49	—	·61	1·7	·58	1·46	·87	·62
1·7	·83	—	—	·06	11·1	·15	·15	—	·70
11·7	—	1·66	·83	·52	4·4	·58	—	·29	·21
1·7	—	1·66	2·49	·27	1·2	·15	1·02	·87	·26
7·5	—	—	·83	·47	26·4	—	·73	·29	1·25
10·0	—	—	—	·27	17·1	—	·15	·15	·70
6·6	1·66	1·66	1·66	·49	5·7	·15	1·75	2·04	·92
35·7	·83	—	—	1·85	23·6	1·17	1·89	·58	1·74
94·6	—	·83	·83	3·28	76·5	·29	·87	·44	3·61
30·7	—	—	—	4·36	44·9	—	·15	·15	5·24
—	—	—	—	—	2·9	·15	·44	·44	·52
34·0	—	—	·83	3·35	143·3	—	·87	1·02	9·83
5·8	—	—	—	·39	8·7	—	·44	·73	·60
31·5	—	—	—	·93	34·3	—	·15	—	1·38
40·7	—	—	—	1·62	86·9	—	—	—	3·70
—	—	—	—	—	·2	—	—	—	·01
·8	—	—	—	·02	3·6	1·60	—	—	·26
79·7	—	—	·83	3·95	106·1	·29	·87	·58	4·41
—	—	—	—	—	—	—	—	—	—
·8	—	—	—	·02	2·8	—	—	—	·09
—	—	—	—	—	—	—	—	—	—
1003·3	10·79	19·92	9·96	64·55	1191·4	6·85	18·81	11·81	76·11
1227·1	6·46	24·52	—	67·27	—	—	—	—	—

seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years that for 1894, &c., &c.

ABSTRACT No. XV.—TABLE showing the AVERAGE STRENGTH, ADMIS-
SICK among the Troops stationed in BENGAL during the Year 1892, with

Average Strength 42,161. Diseases.	Admissions into Hospital.	Deaths.			Invalids.	
		In the Command.	Of Invalids.	Total.	No. sent Home.	No. finally discharged the Service.
I.—GENERAL DISEASES.						
GROUP "A."						
Sub-Group I. Small-pox	8	—	—	—	—	—
Sub-Group I. Other Eruptive Fevers	73	1	—	1	—	—
Sub-Group I. Enteric Fever	1,130	270	—	270	12	1
Sub-Group I. Other Continued Fevers	2,278	1	—	1	—	—
Sub-Group I. Yellow Fever	—	—	—	—	—	—
Sub-Group I. Cholera	134	95	—	95	2	—
Sub-Group I. Dysentery	1,044	25	—	25	44	4
Sub-Group I. Other Diseases	631	—	—	—	—	—
Total	5,298	392	—	392	58	5
Sub-Group II.—Malarial Fevers	20,881	77	—	77	78	22
Sub-Group III.—Septic Diseases	167	8	—	8	—	—
Sub-Group IV. Syphilis, Primary	3,858	—	—	—	—	—
Sub-Group IV. „ Secondary	2,324	7	—	7	86	35
Sub-Group IV. Gonorrhœa	7,099	—	—	—	5	1
Total	13,281	7	—	7	91	36
Sub-Group V.—Hydrophobia, &c.	1	1	—	1	—	—
GROUP "B."						
Sub-Group I.—Parasitic Diseases	154	—	—	—	—	—
Sub-Group II. Scurvy	11	—	—	—	—	—
Sub-Group II. Alcoholism	194	2	—	2	1	—
GROUP "C."						
Debility, &c.	1,161	1	—	1	134	65
GROUP "D."						
Rheumatism	1,320	4	—	4	50	7
Tubercular Diseases	116	31	12	43	58	39
Other Diseases	458	6	1	7	19	9
II.—LOCAL DISEASES.						
Diseases of the—						
1. Nervous System, Nervous Diseases	330	23	—	23	37	28
1. Nervous System, Mental „	69	—	—	—	57	51
2. Eye	540	—	—	—	22	24
3 & 4. Other Organs of Special Senses	784	—	—	—	34	31
5. Circulatory System	420	24	1	25	111	102
6. Respiratory „	1,684	44	5	49	18	7
7. Digestive „	6,233	80	2	82	73	22
8. Lymphatic and Glandular System	1,186	5	—	5	12	2
9. Urinary System	79	6	1	7	8	5
10. Generative „	3,423	—	—	—	15	7
11. Organs of Locomotion	326	1	—	1	28	28
12. Connective Tissue	1,048	1	—	1	1	1
13. Skin	3,151	—	—	—	4	1
III.—POISONS	22	3	—	3	1	—
IV.—INJURIES.						
1. General	201	73	—	73	2	2
2. Local	3,920	39	—	39	41	23
3. In Action	—	—	—	—	—	—
No appreciable disease	119	—	—	—	—	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—
General Total	66,577	828	22	850	953	517
* Average of 10 years, 1882-91	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the
1886 to 1893 in that for

sions into Hospital, Deaths, Numbers Invalided and Constantly
the Ratios per 1,000 of the Strength, and the average Ratios for 10 Years.*

Average Number constantly Sick.	Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged	Constantly Sick.
·95	·2	—	—	—	·02	1·0	·09	—	—	·11
2·35	1·7	·02	—	—	·06	2·4	·01	—	—	·06
175·13	26·8	6·40	·28	·02	4·15	20·9	5·59	·21	—	2·93
88·18	54·0	·02	—	—	2·09	71·4	·04	·01	—	2·53
—	—	—	—	—	—	—	—	—	—	—
3·89	3·2	2·25	·05	—	·09	2·4	1·60	—	—	·06
70·91	24·8	·59	1·04	·09	1·68	25·6	·64	·82	·16	1·65
20·56	15·0	—	—	—	·49	7·0	·02	—	—	·19
361·97	125·7	9·30	1·38	·12	8·59	130·6	7·99	1·04	·16	7·54
681·62	495·3	1·83	1·85	·52	16·17	369·1	·55	1·40	·23	11·16
10·71	4·0	·19	—	—	·25	1·8	·11	—	—	·12
325·65	91·5	—	—	—	7·72	96·9	—	·01	—	7·70
234·60	55·1	·17	2·04	·83	5·56	43·7	·08	1·48	·65	4·16
518·76	168·4	—	·12	·02	12·30	171·2	—	·06	—	11·93
1079·01	315·0	·17	2·16	·85	25·58	311·8	·08	1·55	·65	23·79
·01	—	·02	—	—	—	·1	·04	—	—	—
3·27	3·7	—	—	—	·08	3·6	—	—	—	·09
·62	·3	—	—	—	·01	1·1	·01	—	—	·05
6·46	4·6	·05	·02	—	·15	12·5	·07	·02	—	·38
77·53	27·5	·02	3·18	1·54	1·84	21·9	·02	2·96	1·71	1·48
99·86	31·3	·09	1·19	·17	2·37	31·7	·07	·87	·34	2·07
25·01	2·8	1·02	1·38	·93	·59	3·4	·84	1·50	1·14	·74
28·04	10·9	·17	·45	·21	·67	11·1	·14	·45	·16	·70
23·52	7·8	·55	·88	·66	·56	9·3	·37	1·08	·78	·64
22·73	1·6	—	1·35	1·21	·54	1·5	—	1·10	1·21	·60
36·72	12·8	—	·52	·57	·87	14·1	—	·57	·56	·85
40·32	18·6	—	·81	·73	·96	14·6	·01	·82	·62	·70
50·64	10·0	·59	2·63	2·42	1·20	12·4	·37	3·04	2·32	1·23
88·29	39·9	1·16	·43	·17	2·09	39·1	1·06	·71	·39	2·29
254·77	147·8	1·94	1·73	·52	6·04	143·3	1·73	1·96	·63	5·76
129·68	28·1	·12	·28	·05	3·08	27·5	·02	·40	·15	2·70
9·49	1·9	·17	·19	·12	·23	2·1	·15	·26	·16	·20
228·26	81·2	—	·36	·17	5·41	93·5	·02	·24	·25	6·40
25·75	7·7	·02	·66	·66	·61	7·2	·04	·73	·61	·57
50·16	24·9	·02	·02	·02	1·19	21·5	·02	·11	·03	·97
132·72	74·7	—	·09	·02	3·15	68·4	—	·18	·05	2·75
·99	·5	·07	·02	—	·02	·4	·11	—	—	·01
10·03	4·8	1·73	·05	·05	·24	3·6	1·43	·12	·02	·18
174·98	93·0	·93	·97	·55	4·15	111·9	·86	·94	·66	4·76
—	—	—	—	—	—	—	—	·02	·02	—
4·65	2·8	—	—	—	·11	2·3	—	—	—	·10
—	—	—	—	—	—	—	—	—	—	·01
3657·81	1579·1	20·16	22·60	12·26	86·76	1476·2	16·11	22·08	12·85	78·87
—	1511·2	14·99	24·76	13·29	75·81	—	—	—	—	—

seven years, 1886 to 1892 will be given in the Report for 1893; those for the eight years 1894, &c., &c.

ABSTRACT No. XVI.—TABLE, taken from the REPORT of the PRINCIPAL CLASSES of DISEASES in each of the MILITARY DISTRICTS in the BENGAL

Military Distiсts.	Presidency.		Allahabad.		Oudh.		Rohilkhand.		Narbudda.	
Average Strength.	2,771		2,385		4,952		3,015		1,218	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I.—GENERAL DISEASES.										
GROUP "A."										
Sub-Group I. Small-pox	—	—	—	—	—	—	1	—	1	—
Other Eruptive Fevers	2	—	1	—	5	—	8	—	—	—
Enteric Fever	14	4	48	8	129	32	116	30	57	11
Other Continued Fevers	14	—	117	—	319	—	223	—	28	—
Yellow Fever	—	—	—	—	—	—	—	—	—	—
Cholera	—	—	10	6	6	5	4	1	—	—
Dysentery	106	2	74	3	111	3	110	—	35	—
Other diseases	9	—	12	—	31	—	14	—	2	—
Total	145	6	262	17	601	40	476	31	123	11
Sub-Group II.—Malarial Fevers	1,031	5	882	1	1,261	—	331	—	487	2
Sub-Group III.—Septic Diseases	1	—	2	—	3	—	7	—	2	—
Sub-Group IV. Syphilis, Primary	553	—	290	—	949	—	610	—	52	—
„ Secondary	249	—	271	—	364	1	329	2	63	—
Gonorrhœa	537	—	587	—	1,345	—	651	—	238	—
Total	1,339	—	1,148	—	2,658	1	1,590	2	353	—
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	1	1	—	—	—	—
GROUP "B."										
Sub-Group I.—Parasitic Diseases	12	—	6	—	12	—	9	—	2	—
Sub-Group II. Scurvy	—	—	1	—	—	—	—	—	—	—
Alcoholism	8	—	12	—	13	—	23	—	5	—
GROUP "C."										
Debility, &c.	205	—	57	—	128	—	34	—	53	—
GROUP "D."										
Rheumatism	101	1	51	—	156	1	99	1	37	—
Tubercular Diseases	3	2	5	—	24	2	6	2	1	1
Other diseases	14	1	44	—	45	—	48	—	5	—
II.—LOCAL DISEASES.										
Diseases of the—										
1. Nervous System Nervous Diseases	25	3	27	—	44	4	23	2	14	—
Mental „	9	—	3	—	13	—	2	—	3	—
2. Eye	34	—	29	—	83	—	27	—	13	—
3 & 4. Other Organs of Special Senses	51	—	121	—	98	—	41	—	28	—
5. Circulatory System	36	2	26	2	66	3	26	—	8	—
6. Respiratory „	133	—	115	3	104	2	79	5	45	—
7. Digestive „	345	7	413	8	595	13	530	9	160	1
8. Lymphatic and Glandular System	88	1	122	—	143	1	122	—	37	—
9. Urinary System	8	—	7	—	5	1	4	—	5	—
10. Generative „	141	—	318	—	149	—	138	—	223	—
11. Organs of Locomotion	28	—	21	—	30	1	25	—	5	—
12. Connective Tissue	60	—	75	—	158	—	51	—	18	—
13. Skin	126	—	333	—	549	—	149	—	75	—
III.—POISONS.	—	—	1	—	5	1	—	—	1	1
IV.—INJURIES.										
1. General	3	3	23	4	31	13	1	8	1	—
2. Local	201	1	234	1	519	5	243	2	115	1
3. In Action	—	—	—	—	—	—	—	—	—	—
No appreciable disease	1	—	11	—	24	—	4	—	6	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—	—	—	—
General Total	4,148	32	4,349	36	7,518	89	4,088	62	1,825	17

MEDICAL OFFICER, showing the PREVALENCE and MORTALITY of the DIFFERENT COMMAND, with the ratios per 1,000 of Strength during the year 1892.

Bundelkhand.		Meerut.		Sirhind.		Lahore.		Rawal Pindi.		Peshawar.		Quetta.		Marching.		Total.	
2,490		4,133		3,933		4,741		5,979		2,963		2,211		1,370		42,161	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	2	—	—	—	2	—	1	—	1	—	—	—	—	—	8	—
1	—	2	1	23	—	5	—	2	—	21	—	3	—	—	—	73	1
69	24	97	26	201	34	82	30	173	43	34	16	68	8	42	4	1,130	270
433	—	233	—	200	—	301	—	355	1	20	—	—	—	85	—	2,278	1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	4	7	7	—	—	60	41	11	10	21	13	—	—	10	8	134	95
61	2	83	3	118	2	127	4	80	2	40	4	55	—	44	—	1,044	25
175	—	14	—	57	—	42	—	—	—	130	—	129	—	16	—	631	—
744	30	438	37	599	36	619	75	622	56	267	33	255	8	147	12	5,298	392
1,594	—	1,955	3	841	1	4,009	3	3,237	4	3,415	56	1,234	1	604	1	20,881	77
6	1	28	3	38	2	21	1	22	—	22	1	13	—	2	—	167	8
171	—	120	—	278	—	186	—	450	—	53	—	87	—	59	—	3,858	—
131	—	144	—	222	1	182	—	194	1	69	—	73	1	33	1	2,324	7
396	—	664	—	402	—	643	—	980	—	328	--	236	—	92	--	7,099	—
698	—	928	—	902	1	1,011	—	1,624	1	450	—	396	1	184	1	13,281	7
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
9	—	5	—	8	—	34	—	42	—	8	—	7	—	—	—	154	—
2	—	—	—	—	—	7	—	1	—	—	—	—	—	—	—	11	—
22	—	8	—	10	—	17	—	61	1	12	—	2	—	1	1	194	2
41	—	105	—	96	—	273	1	92	—	35	—	12	—	30	—	1,161	1
55	1	146	—	162	—	108	—	205	—	70	—	107	—	23	—	1,320	4
21	2	6	6	14	3	13	3	15	6	4	—	4	2	—	2	116	31
34	—	35	1	48	—	51	3	74	—	25	1	26	—	9	--	458	6
34	2	17	2	31	2	39	4	30	1	17	1	25	2	4	—	330	23
8	—	1	—	12	—	7	—	2	—	7	—	2	—	—	—	69	—
36	—	44	—	67	—	61	—	69	—	35	—	31	—	11	—	540	—
65	—	83	—	38	—	93	—	100	—	37	—	27	—	2	—	784	—
17	1	36	1	45	5	64	3	49	2	24	2	15	1	8	2	420	24
95	2	151	10	107	4	248	6	249	7	148	5	185	—	25	—	1,684	44
373	5	695	10	580	7	894	7	789	5	217	1	535	4	101	3	6,233	80
95	—	95	1	146	1	133	—	105	—	40	—	37	1	23	—	1,186	5
4	1	9	—	8	2	11	1	10	—	2	1	3	—	3	—	79	6
327	—	576	—	259	—	393	—	605	—	131	--	62	—	101	—	3,423	—
9	—	30	—	39	—	43	—	50	—	19	—	18	—	9	—	326	1
121	—	82	—	89	—	114	—	159	1	60	—	34	—	27	—	1,048	.1
268	—	352	—	232	—	397	—	424	—	121	—	102	—	23	—	3,151	—
2	1	1	—	—	—	3	—	2	—	3	—	4	—	—	—	22	3
12	2	14	2	10	1	56	18	29	13	18	5	1	1	2	3	201	73
276	5	442	6	359	6	375	2	599	5	251	3	228	1	78	1	3,920	39
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	17	—	11	—	10	—	14	—	9	—	4	--	2	—	119	—
—	--	—	—	—	—	—	—	—	--	—	—	—	—	—	—	—	—
4,980	53	6,299	82	4,751	71	9,104	127	9,280	102	5,447	109	3,369	22	1,419	26	66,577	828

Ratio per 1,000

Military Districts.	Presidency.		Allahabad.		Oudh.		Rohilkhand.		Narbudda.		Bundelkhand.	
Average Strength.	2,771		2,385		4,952		3,015		1,218		2,490	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I.—GENERAL DISEASES.												
GROUP "A."												
Sub-Group I.												
Small-pox	—	—	—	—	—	—	·3	—	·8	—	—	—
Other Eruptive Fevers	·7	—	·4	—	1·0	—	2·7	—	—	—	·4	—
Enteric Fever	5·1	1·44	20·1	3·35	26·1	6·46	38·5	9·95	46·8	9·03	27·7	9·64
Other Continued Fevers	5·1	—	49·1	—	64·4	—	74·0	—	23·0	—	173·9	—
Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—
Cholera	—	—	4·2	2·52	1·2	1·01	1·3	·33	—	—	2·0	1·61
Dysentery	88·3	·72	31·0	1·26	22·4	.61	36·5	—	28·7	—	24·5	·80
Other Diseases	3·2	—	5·0	—	6·3	—	4·6	—	1·6	—	70·3	—
Total	52·3	2·17	109·9	7·13	121·4	8·08	157·9	10·28	101·0	9·03	298·8	12·05
Sub-Group II.—Malarial Fevers	372·1	1·80	369·8	.42	254·6	—	109·8	—	399·8	1·64	640·2	—
Sub-Group III.—Septic Diseases	·4	—	·8	—	·6	—	2·3	—	1·6	—	2·4	·40
Sub-Group IV.												
Syphilis, Primary	199·6	—	121·6	—	191·6	—	202·3	—	42·7	—	68·7	—
„ Secondary	89·9	—	113·6	—	73·5	.20	109·1	·66	51·7	—	52·6	—
Gonorrhœa	193·8	—	246·1	—	271·6	—	215·9	—	195·4	—	159·0	—
Total	483·2	—	481·3	—	536·8	·20	527·4	·66	289·8	—	280·3	—
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	·2	·20	—	—	—	—	—	—
GROUP "B."												
Sub-Group I.—Parasitic Diseases	4·3	—	2·5	—	2·4	—	3·0	—	1·6	—	3·6	—
Sub-Group II.												
Scurvy	—	—	.4	—	—	—	—	—	—	—	·8	—
Alcoholism	2·9	—	5·0	—	2·6	—	7·6	—	4·1	—	8·8	—
GROUP "C."												
Debility, &c.	74·0	—	23·9	—	25·8	—	11·3	—	43·5	—	16·5	—
GROUP "D."												
Rheumatism	36·4	·36	21·4	—	31·5	·20	32·8	·33	30·4	—	22·1	·40
Tubercular Diseases	1·1	·72	2·1	—	4·8	·40	2·0	·66	·8	·82	8·4	·80
Other Diseases	5·1	·36	18·4	—	9·1	—	15·9	—	4·1	—	13·7	—
II.—LOCAL DISEASES.												
Diseases of the—												
1. Nervous System — Nervous Diseases	9·0	1·08	11·3	—	8·9	·81	7·6	·66	11·5	—	13·7	·80
1. Nervous System — Mental „	3·2	—	1·3	—	2·6	—	.7	—	2·5	—	3·2	—
2. Eye	12·3	—	12·2	—	16·8	—	9·0	—	10·7	—	14·5	—
3 & 4. Other Organs of Special Senses	18·4	—	50·7	—	19·8	—	13·6	—	23·0	—	26·1	—
5. Circulatory System	13·0	·72	10·9	·84	13·3	·61	8·6	—	6·6	—	6·8	·40
6. Respiratory „	48·0	—	48·2	1·26	21·0	·40	26·2	1.66	36·9	—	38·2	·80
7. Digestive „	124·5	2·53	173·2	3·35	120·2	2·63	175·8	2·99	131·4	·82	152·2	2·01
8. Lymphatic and Glandular System	31·8	·36	51·2	—	28·9	·20	40·5	—	30·4	—	38·2	—
9. Urinary System	2·9	—	2·9	—	1·0	·20	1·3	—	4·1	—	1·6	·40
10. Generative „	50·9	—	133·3	—	30·1	—	45·8	—	183·1	—	131·3	—
11. Organs of Locomotion	10·1	—	8·8	—	6·1	·20	8·3	—	4·1	—	3·6	—
12. Connective Tissue	21·7	—	31·4	—	31·9	—	16·9	—	14·8	—	48·6	—
13. Skin	45·5	—	139·6	—	110·9	—	49·4	—	61·6	—	107·6	—
III.—POISONS	—	—	·4	—	1·0	·20	—	—	·8	·82	·8	·40
IV.—INJURIES.												
1. General	1·1	1·08	9·6	1·68	6·3	2·63	·3	2·65	·8	—	4·8	·80
2. Local	72·5	·3	98·1	·42	104·8	1·01	80·6	·66	94·4	·82	110·8	2·01
3. In Action	—	—	—	—	—	—	—	—	—	—	—	—
No appreciable disease	·4	—	4·6	—	4·8	—	1·3	—	4.9	—	2·4	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—	—	—	—	—	—
General Total	1496·9	11·55	1823.5	15·09	1518·2	17·97	1355·9	20·56	1498·4	13·96	2000·0	21·29

of Mean Strength.

Meerut.		Sirhind.		Lahore.		Rawal Pindi.		Peshawar.		Quetta.		Marching.		Total.	
4,133		3,933		4,741		5,979		2,963		2,211		1,370		42,161	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
·5	—	—	—	·4	—	·2	—	·3	—	—	—	—	—	·2	—
·5	·24	5·8	—	1·1	—	·3	—	7·1	—	1·4	—	—	—	1·7	·02
23·5	6·29	51·1	8·64	17·3	6·33	28·9	7·19	11·5	5·40	30·8	3·62	30·7	2·92	26·8	6·40
56·4	—	50·9	—	63·5	—	59·4	·17	6·7	—	—	—	25·5	—	54·0	·02
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1·7	1·69	—	—	12·7	8·65	1·8	1·67	7·1	4·39	—	—	7·3	5·84	3·2	2·25
20·1	·73	30·0	·51	26·8	·84	13·4	·33	13·5	1·35	24·9	—	32·1	—	24·8	·59
3·4	—	14·5	—	8·9	—	—	—	43·9	—	58·3	—	11·7	—	15·0	—
106·9	8·95	152·3	9·15	130·6	15·82	104·0	9·37	90·1	11·14	115·3	3.62	107·3	8·76	125·7	9·30
473·0	·73	213·8	·25	845·6	·63	541·4	·67	1152·5	18·90	558·1	·45	440·9	·73	495·3	1·83
6·8	·73	9·7	·51	4·4	·21	3·7	—	7·4	·34	5·9	—	1·5	—	4·0	·19
29·0	—	70·7	—	39·2	—	75·3	—	17·9	—	39·3	—	43·1	—	91·5	—
34·8	—	56·4	·25	38·4	—	32·4	·17	23·3	—	33·0	·45	24·1	·73	55·1	·17
160·7	—	102·2	—	135·6	—	163·9	—	110·7	—	106·7	—	67·1	—	168·4	—
224·5	—	229·3	·25	213·2	—	271·6	·17	151·9	—	179·1	·45	134·3	·73	315·0	·17
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	·02
1·2	—	2·0	—	7·2	—	7·0	—	2·7	—	3·2	—	—	—	3·7	—
—	—	—	—	1.5	—	·2	—	—	—	—	—	—	—	·3	—
1·9	—	2·5	—	3·6	—	10·2	·17	4·0	—	·9	—	·7	·73	4·6	·05
25·4	—	24·4	—	57·6	·21	15·4	—	11·8	—	5·4	—	21·9	—	27·5	·02
35·3	—	41·2	—	22·8	—	34·3	—	23·6	—	48·4	—	16·8	—	31·3	·09
1·5	1·45	3·6	·76	2·7	·63	2·5	1·00	1·3	—	1·8	·90	—	1·46	2·8	·74
8·5	·24	12·2	—	10·8	·63	12·4	—	8·4	·34	11·8	—	6·6	—	10·9	·14
4·1	·48	7·9	·51	8·2	·84	5·0	·17	5·7	·34	11·3	·90	2·9	—	7·8	·55
·2	—	3·1	—	1·5	—	·3	—	2·4	—	·9	—	—	—	1·6	—
10·6	—	17·0	—	12·9	—	11·5	—	11·8	—	14·0	—	8.0	—	12·8	—
20·1	—	9·7	—	19·6	—	16·7	—	12·5	—	12·2	—	1·5	—	18·6	—
8·7	·24	11·4	1·27	13·5	·63	8·2	·33	8·1	·67	6·8	·45	5·8	1·46	10·0	·57
36·5	2·42	27·2	1·02	52·3	1·27	41·6	1·17	49·9	1.69	83·7	—	18·2	—	39·9	1·04
168·2	2·42	147·5	1·78	188·6	1·48	132·0	·84	73·2	·34	242·0	1·81	73·7	2·19	147·8	1·90
23·0	·24	37·1	·25	28·1	—	17·6	—	13·5	—	16·7	·45	16·8	—	28·1	·12
2·2	—	2·0	·51	2·3	·21	1·7	—	·7	·34	1·4	—	2·2	—	1·9	·14
139·4	—	65·9	—	82·9	—	101·2	—	44·2	—	28·0	—	73·7	—	81·2	—
7·3	—	9·9	—	9·1	—	8·4	—	6·4	—	8·1	—	6·8	—	7·7	·02
19·8	—	22·6	—	24·0	—	26·6	·17	20·2	—	15·4	—	19·7	—	24·9	·02
85·2	—	59·0	—	83·7	—	70·9	—	40·8	—	46·1	—	16·8	—	74·7	—
·2	—	—	—	·6	—	·3	—	1·0	—	1·8	—	—	—	·5	·07
3·4	·48	2·5	·25	11·3	3·80	4·9	2·17	6·1	1·69	·5	·45	1·5	2·19	4·8	1·73
106·9	1·45	91·3	1·53	79·1	·42	100·2	·84	84·7	1·01	103·1	·45	56·9	·73	93·0	·93
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4·1	—	2·8	—	2·1	—	2·3	—	3·0	—	1·8	—	1·5	—	2·8	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1534·1	19·84	1208·0	18·05	1920·3	26·79	1552·1	17·06	1838·3	36·79	1523·7	9·95	1035·8	18·98	1579·1	19·64

ABSTRACT No. XVII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS and DEATHS which took place at the CHIEF STATIONS in the BENGAL COMMAND during the year 1892.

Districts.	Stations.	Average Annual Strength.	Admitted into Hospital.	Died in the Command.	Ratio per 1,000 of Strength.		Ratio per 1,000 of Strength, 1882 to 1891.	
					Admissions.	Deaths.	Admissions.	Deaths.
PRESIDENCY	Fort William	1,125	1,431	8	1272·0	7·11	1444·2	13·66
	Dum-Dum	807	1,503	12	1862·5	14·87	1533·8	12·01
	Barrackpore	343	710	6	2070·0	17·49	1778·5	11·92
	Darjeeling	384	389	6	1013·0	15·63	1161·5	15·41
	Gnathong	112	115	—	1026·8	—	*1445·1	21·98
ALLAHABAD	Allahabad	886	1,502	12	1695·3	13·54	1778·6	23·64
	Fort Allahabad	181	289	1	1596·7	5·52	1598·0	16·14
	Dinapore	953	1,828	15	1918·2	15·74	1617·4	19·65
	Benares	365	730	8	2000·0	21·92	1548·7	25·52
OUDH	Lucknow	2,591	3,805	47	1468·5	18·14	1328·0	14·95
	„ Military Prison	44	85	—	1931·8	—	1342·1	19·74
	Cawnpore	879	1,620	23	1843·0	26·17	1483·6	20·12
	Sitapur	439	479	7	1132·1	15·95	1343·2	17·98
	Fyzabad	776	1,210	9	1559·3	11·60	1598·7	12·90
	Fatehgarh	223	301	3	1349·8	13·45	1792·5	18·38
ROHILKHAND	Bareilly	1,129	1,451	32	1285·2	28·34	1357·5	15·88
	Moradabad	85	110	6	1294·1	70·59	1831·2	12·93
	Shahjahanpur	446	753	5	1688·3	11·21	1640·0	12·95
	Ranikhet	900	1,183	11	1314·4	12·22	1170·3	12·65
	Chaubattia	267	370	4	1385·8	14·98	1403·9	12·97
	Naini Tal	188	221	4	1175·5	21·28	1601·3	17·70
NARBUDDA	Jubbulpore	744	1,119	6	1504·0	8·06	1499·3	16·21
	Saugor	362	573	2	1582·9	5·52	1853·1	8·78
	Pachmarhi	112	133	9	1187·5	80·36	1758·3	7·86
BUNDELKHAND	Agra	1,165	2,190	23	1879·8	19·74	1532·0	13·12
	Jhansi	773	1,499	27	1939·2	34·93	2042·8	21·02
	Sipri	100	149	1	1490·0	10·00	†2035·2	16·78
	Nowgong	452	1,142	2	2526·5	4·42	1814·5	12·86
MEERUT	Meerut	1,783	3,404	35	1909·1	19·63	1713·0	15·18
	Muttra	504	682	8	1353·2	15·87	1763·5	18·44
	Delhi	303	765	11	2524·8	36·30	3037·0	18·23
	Roorkee	394	359	7	911.2	17·77	1667·2	16·89
	Chakrata	990	943	18	952·5	18·18	1185·1	10·38
	Landour	159	146	3	918·2	18·87	1671·7	19·62
SIRHIND	Umballa	1,925	2,553	26	1326·2	13·51	1202·2	11·89
	Subathu	418	468	10	1119·6	23.92	1258·8	12·36
	Dagshai	797	848	16	1064·0	20·08	1098·3	9·20
	Jutogh	252	259	4	1027·8	15·87	1253·6	8·17
	Solon	217	200	2	921·7	9·22	997·3	7·23
	Kasauli	324	423	13	1305·6	40·12	1679·3	12·26
LAHORE	Mian Mir	1,019	2,359	39	2315·0	38·27	2526·0	21·10
	Fort Lahore	97	353	9	3639·2	92·78	2637·0	39·81
	Ferozepore	963	1,897	41	1969·9	42·58	1687·0	11·03
	Jullundur	651	777	3	1193·5	4·61	1389·4	14·93
	Multan	918	1,953	19	2127·5	20·70	1627·9	13·08
	Amritsar	273	705	4	2582·4	14·65	2405·1	17·40
	Bhagsu	61	41	2	672·1	32·79	1257·0	8·18
	Dalhousie	759	1,019	10	1342·6	13·18	1471·9	11·90

* 2 years (1890–91). † 6 years (1886–91).

Districts.	Stations.	Average Annual Strength.	Admitted into Hospital.	Died in the Command.	Ratio per 1,000 of Strength.		Ratio per 1,000 of Strength, 1882 to 1891.	
					Admissions.	Deaths.	Admissions.	Deaths.
RAWAL PINDI	Rawal Pindi	2,766	3,877	54	1401·7	19·52	1411·1	16·07
	Fort Attock	110	298	5	2709·1	45·45	2770·7	21·80
	Sialkot	1,318	3,189	20	2419·6	15·17	1508·4	15·22
	Campbellpore	277	611	5	2205·8	18·05	1520·5	14·56
	Murree	175	214	9	1222·9	51·43	1347·4	30·30
	Khyra Gali	56	42	—	750·0	—	1254·2	9·97
	Bara Gali	38	34	—	894·7	—	*1167·5	7·08
	Kalabagh	39	56	—	1435·9	—	1355·5	11·41
	Kuldana	430	298	2	693·0	4·65	1227·5	4·28
	Camp Gharial	157	117	5	745·2	19·11	901·7	11·46
	„ Thobba	330	336	2	1018·2	6·06	†1426·9	6·96
	„ Topa	93	59	2	634·4	21·51	‡1122·3	7·41
	„ Ghora Dhaka	190	149	—	784·2	—	‖677·9	7·79
PESHAWAR	Peshawar	1,640	3,219	93	1962·8	56·71	1951·5	15·58
	Nowshera	715	1,627	11	2275·5	15·38	1486·7	11·45
	Cherat	608	601	5	988·5	8·22	1286·9	16·42
QUETTA	Quetta	2,211	3,369	22	1523·7	9·95	§1363·6	11·55
MARCHING	Troops on the march	1,370	1,419	26	1035·8	18·98	712·7	5·31

* 9 years (1882–90). † 8 years (1882, 1884, and 1886–91). ‡ 8 years (1884–91).
‖ 3 years (1882 and 1889–90). § 7 years (1882 and 1886–91).

ABSTRACT No. XVIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BENGAL COMMAND at which the ADMISSIONS and DEATHS from ENTERIC FEVER took place in each of the four quarters of the year 1892.

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Presidency	Fort William	1	—	1	—	1	—	—	—	3	—
	Dum Dum	—	—	—	—	—	—	5	2	5	2
	Barrackpore	1	—	2	1	—	—	2	—	5	1
	Darjeeling	—	—	1	1	—	—	—	—	1	1
	Gnathong	—	—	—	—	—	—	—	—	—	—
Allababad	Allahabad	1	2	2	—	11	—	8	2	22	4
	Fort Allahabad	—	—	—	—	—	—	—	—	—	—
	Dinapore	—	—	—	—	5	—	4	1	9	1
	Benares	3	—	5	1	4	2	5	—	17	3
Oudh	Lucknow	25	7	20	8	5	—	28	2	78	17
	,, Military Prison	—	—	—	—	—	—	—	—	—	—
	Cawnpore	6	3	9	2	6	2	2	—	23	7
	Sitapur	3	—	7	3	5	2	—	—	15	5
	Fyzabad	7	2	1	1	—	—	3	—	11	3
	Fatehgarh	2	—	—	—	—	—	—	—	2	—
Rohilkhand	Bareilly	22	7	9	6	9	3	10	3	50	19
	Moradabad	—	3	—	—	—	—	1	—	1	3
	Shahjahanpur	2	—	4	—	6	—	25	2	37	2
	Ranikhet	1	—	12	5	6	—	—	—	19	5
	Chaubattia	—	—	1	—	2	—	—	—	3	—
	Naini Tal	—	—	4	—	—	1	2	—	6	1

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Narbudda -	Jubbulpore -	5	—	13	3	15	1	2	—	35	4
	Saugor -	1	—	—	—	2	—	2	—	5	—
	Pachmarhi -	—	1	4	1	13	5	—	—	17	7
Bundelkhand	Agra - -	—	—	6	4	9	3	3	—	18	7
	Jhansi - -	4	1	7	4	17	3	18	6	46	14
	Sipri - -	—	—	1	1	—	—	—	—	1	1
	Nowgong -	2	1	2	1	—	—	—	—	4	2
Meerut -	Meerut -	17	3	12	4	4	2	8	2	41	11
	Muttra -	—	—	1	—	—	—	—	—	1	—
	Delhi - -	1	2	1	—	—	—	—	1	2	3
	Roorkee -	—	—	2	1	1	—	5	—	8	1
	Chakrata -	2	1	19	5	16	5	8	—	45	11
	Landour -	—	—	—	—	—	—	—	—	—	—
Sirhind -	Umballa -	8	4	12	3	10	2	12	—	42	9
	Subathu -	1	—	8	—	28	5	4	—	41	5
	Dagshai -	1	1	43	6	44	3	7	2	95	12
	Jutogh - -	1	—	5	1	3	1	—	—	9	2
	Solon - -	—	—	4	1	—	1	—	—	4	2
	Kasauli -	—	—	7	3	3	1	—	—	10	4
Lahore - -	Mian Mir -	4	2	5	2	3	—	3	2	15	6
	Port Lahore -		—	—	—	—	—	—	—	—	—
	Ferozepore -	1	—	7	3	1	—	4	4	13	7
	Jullundur -	—	—	—	—	3	—	1	1	4	1
	Multan - -	1	1	18	5	—	—	2	—	21	6
	Amritsar -	—	—	2	1	1	—	1	1	4	2
	Bhagsu -	—	—	7	2	—	—	—	—	7	2
	Dalhousie -	—	—	13	4	5	2	—	—	18	5

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Rawal Pindi -	Rawal Pindi -	9	1	16	7	5	—	44	16	74	24
	Fort Attock -	—	—	—	—	—	—	—	—	—	—
	Sialkot - -	2	—	33	5	11	3	23	5	69	13
	Campbellpore	—	—	2	1	5	1	1	—	8	2
	Murree -	—	—	3	—	1	1	—	1	4	2
	Khyra Gali -	—	—	1	—	—	—	—	—	1	—
	Bara Gali -	—	—	—	—	—	—	—	—	—	—
	Kalabagh -	—	—	—	—	1	—	—	—	1	—
	Kuldana -	—	—	10	2	2	—	—	—	12	2
	Camp Gharial	—	—	—	—	2	—	—	—	2	—
	,, Thobba	—	—	—	—	—	—	—	—	—	—
	,, Topa -	—	—	—	—	1	—	—	—	1	—
	,, Ghora Dhaka.	—	—	1	—	—	—	—	—	1	—
Peshawar -	Peshawar -	3	1	10	4	5	4	—	—	18	9
	Nowshera -	—	2	5	—	3	3	1	—	9	5
	Cherat - -	—	—	2	2	4	—	1	—	7	2
Quetta -	Quetta - -	1	—	10	—	45	3	12	5	68	8
Marching -	Troops on the March.	12	—	—	—	—	—	30	4	42	4
	Total - -	150	45	370	104	323	59	287	62	1130	270

ABSTRACT No. XIX.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BENGAL COMMAND at which the ADMISSIONS and DEATHS from CHOLERA took place in each of the four quarters of the year 1892.

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
Allahabad	Allahabad	—	—	1	—	—	—	—	—	1	—
	Dinapore	—	—	—	—	3	2	5	4	8	6
	Benares	—	—	—	—	—	—	1	—	1	—
Oudh	Lucknow	—	—	—	—	3	3	3	2	6	5
Rohilkhand	Shahjahanpur	—	—	—	—	—	—	1	—	1	—
	Chanbuttia	—	—	1	—	—	—	—	—	1	—
	Naini Tal	—	—	2	1	—	—	—	—	2	1
Bundelkhand	Agra	—	—	—	—	1	1	—	—	1	1
	Jhansi	—	—	4	3	—	—	—	—	4	3
Meerut	Muttra	—	—	1	1	1	1	—	—	2	2
	Delhi	—	—	1	1	—	—	—	—	1	1
	Roorkee	—	—	2	2	—	—	—	—	2	2
	Landour	—	—	2	2	—	—	—	—	2	2
Lahore	Mian Mir	—	—	5	4	21	13	—	—	26	17
	Fort Lahore	—	—	—	—	4	4	—	—	4	4
	Ferozepore	—	—	25	18	2	—	—	—	27	18
	Multan	—	—	—	—	3	2	—	—	3	2
Rawal Pindi	Rawal Pindi	—	—	—	—	3	3	1	1	4	4
	Camp Gharial	—	—	—	—	1	1	—	—	1	1
	„ Topa	—	—	—	—	2	2	—	—	2	2
	Murree	—	—	—	—	4	3	—	—	4	3
Peshawar	Peshawar	—	—	7	4	14	9	—	—	21	13
Marching	Troops on the March.	1	1	—	1	—	—	9	6	10	8
	Total	1	1	51	37	62	44	20	13	134	95

ABSTRACT No. XX.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE of DYSENTERY, DIARRHŒA, and HEPATIC DISEASES (Congestion, Inflammation, and Abscess of Liver) in each of the DISTRICTS in the BENGAL COMMAND during the Year 1892.

Districts.	Presidency.		Allahabad.		Oudh.		Rohilkhand.		Narbudda.		Bundelkhand.		Meerut.		Sirhind.		Lahore.		Rawal Pindi.		Peshawar.		Quetta.		Marching.		Total.	
Strength.	2,771		2,385		4,952		3,015		1,218		2,490		4,133		3,933		4,741		5,979		2,963		2,211		1,370		42,161	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Dysentery	106	2	74	3	111	3	110	—	35	—	61	2	83	3	118	2	127	4	80	2	40	4	55	—	44	—	1,044	25
Diarrhœa	51	—	127	—	111	—	108	—	37	—	93	1	136	1	88	—	314	—	222	1	42	—	121	1	59	—	1,509	4
Hepatic Diseases	85	7	63	8	111	11	70	8	16	1	68	3	50	3	80	6	74	6	45	4	20	—	59	1	8	2	749	60
Total	242	9	264	11	333	14	288	8	88	1	222	6	269	7	286	8	515	10	347	7	102	4	235	2	111	2	3,302	89
Ratio per 1,000 of Mean Strength.																												
Dysentery	38·3	·72	31·0	1·26	22·4	·61	36·5	—	28·7	—	24·5	·80	20·1	·73	30·0	.51	26·8	·84	13·4	·33	13·5	1·35	24·9	—	32·1	—	24·8	·59
Diarrhœa	18·4	—	53·2	—	22·4	—	35·8	—	30·4	—	37·3	·40	32·9	·24	22·4	—	66·2	—	37·1	·17	14·2	—	54·7	·45	43·1	—	35·8	·09
Hepatic Diseases	30·7	2·53	26·4	3·35	22·4	2·22	23·2	2·65	13·1	·82	27·3	1·20	12·1	·73	20·3	1·53	15·6	1·27	7·5	·67	6·7	—	26·7	·45	5·8	1·46	17·8	1·42
Total	87·3	3·25	110·7	4·61	67·2	2·83	95·5	2·65	72·2	·82	89·2	2·41	65·1	1·69	72·7	2·03	108·6	2·11	58·0	1·17	34·4	1·35	106·3	·90	81·0	1·46	78·3	2·11

ABSTRACT No. XXI.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE and MORTALITY in the Cantonments of the BENGAL COMMAND, due to DYSENTERY, DIARRHŒA, and HEPATIC DISEASES (Congestion, Inflammation, and Abscess of the Liver) in each Quarter of the Year 1892.

—		Dysentery.				Diarrhœa.				Hepatic Diseases.				Total.			
		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.	
	Strength.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1st Quarter -	40,955	183	4	4·5	·10	223	—	5·4	—	148	12	3·6	·29	554	16	13·5	·39
2nd „ -	43,154	234	4	5·4	·09	406	—	9·4	—	230	11	5·3	·25	870	15	20·2	·35
3rd „ -	42,945	306	7	7·1	·16	499	4	11·6	·09	224	18	5·2	·42	1,029	29	24·0	·68
4th „ -	41,313	321	10	7·8	·24	381	—	9·2	—	147	19	3·6	·46	849	29	20·6	·70
Total -	42,092	1,044	25	24·8	·59	1,509	4	35·9	·10	749	60	17·8	1·43	3,302	89	78·4	2·11

ABSTRACT No. XXII.—TABLE showing the AVERAGE STRENGTH, ADMIS-
SICK among the TROOPS stationed in MADRAS during the Year 1892, with

Average Strength 13,182.	Admissions into Hospital.	Deaths.			Invalids.		Average Number Constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
GROUP "A."							
Sub-Group I.							
Small-pox	3	1	—	1	—	—	·40
Other Eruptive Fevers	8	—	—	—	—	—	·26
Enteric Fever	154	40	—	40	8	—	21·99
Other Continued Fevers	819	1	—	1	1	—	40·92
Yellow Fever	—	—	—	—	—	—	—
Cholera	8	7	—	7	—	—	·06
Dysentery	581	16	—	16	31	2	43·35
Other Diseases	164	—	—	—	—	—	4·70
Total	1,737	65	—	65	40	2	111·68
Sub-Group II.—Malarial Fevers	2,293	13	—	13	21	2	91·55
Sub-Group III.—Septic Diseases	8	1	—	1	—	—	·67
Sub-Group IV.							
Syphilis, Primary	1,718	—	—	—	—	—	158·26
" Secondary	976	1	4	5	94	28	114·77
Gonorrhœa	1,696	—	—	—	1	—	124·81
Total	4,390	1	4	5	95	28	397·84
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
GROUP "B."							
Sub-Group I.—Parasitic Diseases	43	—	—	—	—	—	1·26
Sub-Group II.							
Scurvy	—	—	—	—	—	—	—
Alcoholism	58	1	—	1	1	—	2·33
GROUP "C."							
Debility, &c.	349	2	—	2	48	23	24·24
GROUP "D."							
Rheumatism	523	2	—	2	32	5	40·36
Tubercular Diseases	29	8	2	10	17	12	6·27
Other Diseases	156	—	1	1	18	3	10·65
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System — Nervous Diseases	168	7	—	7	19	11	10·39
1. Nervous System — Mental "	17	1	—	1	18	20	7·03
2. Eye	157	—	—	—	10	6	8·66
3 & 4. Other Organs of Special Senses	175	—	—	—	3	4	9·99
5. Circulatory System	72	3	—	3	26	17	7·33
6. Respiratory "	390	5	1	6	10	2	20·74
7. Digestive "	1,519	27	1	28	26	8	74·69
8. Lymphatic and Glandular System	703	1	—	1	10	1	89·49
9. Urinary System	40	3	—	3	9	7	3·29
10. Generative "	936	—	—	—	7	8	68·82
11. Organs of Locomotion	107	—	—	—	9	5	7·62
12. Connective Tissue	248	—	—	—	4	1	12·88
13. Skin	810	—	—	—	2	—	31·77
III.—POISONS	6	1	—	1	—	—	·14
IV.—INJURIES.							
1. General	19	14	—	14	1	—	1·46
2. Local	1,265	4	—	4	11	12	56·59
3. In Action	—	—	—	—	—	1	—
No appreciable disease	23	—	—	—	—	—	·67
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	16,241	159	9	168	437	178	1098·41
*Average of 10 years 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios
years 1886 to 1893 in

SIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY
the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
·2	·08	—	—	·03	·6	·09	—	—	·06
·6	—	—	—	·02	2·6	—	—	—	·10
11·7	3·03	·61	—	1·67	11·3	3·39	·08	—	1·35
62·1	·03	·08	—	3·10	72·4	·06	·09	—	3·31
—	—	—	—	—	—	—	—	—	—
·6	·53	—	—	—	1·6	1·23	—	—	·02
44·1	1·21	2·35	·15	3·29	52·9	1·23	2·30	·35	3·99
12·4	—	—	—	·36	11·4	·05	—	—	·36
131·8	4·93	3·03	·15	8·47	152·8	6·05	2·47	·35	9·19
174·0	·99	1·59	·15	6·94	236·9	1·18	·98	·25	8·10
·6	·08	—	—	·05	·7	·08	—	—	·04
130·3	—	—	—	12·00	110·7	—	·01	—	9·64
74·0	·38	7·13	2·12	8·71	54·3	·13	4·10	1·50	5·93
128·7	—	·08	—	9·47	145·9	—	·06	—	10·63
333·0	·38	7·21	2·12	30·18	310·9	·13	4·17	1·50	26·20
—	—	—	—	—	—	·01	—	—	—
3·3	—	—	—	·10	3·2	—	·01	—	·08
—	—	—	—	—	·1	—	—	—	·01
4·4	·08	·08	—	·18	10·6	·04	·01	—	·34
26·5	·15	3·64	1·74	1·84	31·4	·10	3·50	1·63	2·03
40·0	·15	2·43	·38	3·06	31·5	·04	·94	·36	2·16
2·2	·76	1·29	·91	·47	3·1	·72	1·29	1·03	·60
11·8	·08	1·37	·23	·81	9·9	·17	·62	·28	·72
12·7	·53	1·44	·83	·79	9·7	·39	1·19	·93	·63
1·3	·08	1·37	1·52	·53	1·8	·04	1·56	1·63	·58
11·9	—	·76	·45	·66	13·4	—	·48	·62	·75
13·8	—	·23	·30	·76	13·1	—	·80	·69	·66
5·5	·23	1·97	1·29	·56	8·6	·45	2·55	1·77	·90
29·6	·45	·76	·15	1·57	26·7	·81	·91	·36	1·55
115·2	2·12	1·97	·61	5·67	140·5	2·51	2·90	·93	6·54
58·3	·08	·76	·08	6·79	52·7	·01	·56	·18	6·20
3·0	·23	·68	·53	·25	3·0	·14	·31	·16	·28
71·0	—	·53	·61	5·22	87·7	·04	·41	·23	5·77
8·1	—	·68	·38	·58	6·3	·01	·75	·61	·45
18·8	—	·30	·08	·98	19·9	—	·18	·05	1·00
61·4	—	·15	—	2·41	72·6	·01	·10	·09	3·02
·5	·08	—	—	·01	·6	·06	—	—	·02
1·4	1·06	·08	—	·11	2·7	1·90	·14	·01	·14
96·0	·30	·83	·91	4·29	110·1	·75	·96	·67	4·91
—	—	—	·08	—	·5	·21	·14	·26	·05
1·7	—	—	—	·05	1·8	—	—	—	·08
—	—	—	—	—	—	—	—	—	—
1232·0	12·74	33·15	13·50	83·33	1362·8	15·86	27·93	14·64	83·00
1263·0	13·89	28·57	13·76	75·15	—	—	—	—	—

for the seven years 1886 to 1892 will be given in the Report for 1893; those for the eight
that for 1894, &c., &c.

ABSTRACT No. XXIII.—Table, taken from the Report of the Principal Medical in each of the Military Divisions in the Madras

Military Divisions.	Madras District.		Southern. District.		Belgaum and Bangalore Districts.		Secunderabad District.		Rangoon District.		Myingyan and Mandalay Districts.		Depôts.		On the March.		Total.	
Average Strength	990		869		3,648		2,812		1,899		2,397		542		25		13,182	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I.—GENERAL DISEASES.																		
GROUP "A."																		
Sub-Group I. Small-pox	—	—	—	—	3	1	—	—	—	—	—	—	—	—	—	—	3	1
Sub-Group I. Other Eruptive Fevers	4	—	—	—	2	—	2	—	—	—	—	—	—	—	—	—	8	—
Sub-Group I. Enteric Fever	16	6	9	2	38	5	63	15	12	5	13	4	3	3	—	—	154	4
Sub-Group I. Other Continued Fevers	63	—	66	—	175	—	237	—	220	—	25	1	33	—	—	—	819	1
Sub-Group I. Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sub-Group I. Cholera	1	1	—	—	5	5	—	—	—	—	1	—	—	—	1	1	8	7
Sub-Group I. Dysentery	15	—	15	1	123	1	201	5	119	3	70	4	33	1	5	1	581	16
Sub-Group I. Other Diseases	1	—	—	—	37	—	126	—	—	—	—	—	—	—	—	—	164	—
Total	100	7	90	3	383	12	629	20	351	8	109	9	69	4	6	2	1,737	65
Sub-Group II.—Malarial Fevers	97	1	22	—	205	1	224	—	214	—	1,412	11	113	—	6	—	2,293	13
Sub-Group III.—Septic Diseases	—	—	3	—	1	1	2	—	—	—	—	—	2	—	—	—	8	1
Sub-Group IV. Syphilis, Primary	32	—	72	—	540	—	417	—	324	—	274	—	59	—	—	—	1,718	—
Sub-Group IV. " Secondary	61	—	22	—	292	—	164	1	194	—	120	—	123	—	—	—	976	1
Sub-Group IV. Gonorrhœa	111	—	82	—	466	—	433	—	258	—	302	—	44	—	—	—	1,696	—
Total	204	—	176	—	1,298	—	1,014	1	776	—	696	—	226	—	—	—	4,390	1
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GROUP "B."																		
Sub-Group I.—Parasitic Diseases	6	—	—	—	5	—	5	—	9	—	17	—	1	—	—	—	43	—
Sub-Group II. Scurvy	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sub-Group II. Alcoholism	13	—	8	—	10	1	7	—	5	—	8	—	7	—	—	—	58	1
GROUP "C."																		
Debility, &c.	47	—	8	—	43	—	118	—	19	—	91	2	23	—	—	—	349	2
GROUP "D."																		
Rheumatism	40	—	14	1	163	—	70	—	107	—	98	—	30	1	1	—	523	2
Tubercular Diseases	3	1	2	1	4	—	5	3	5	—	4	1	6	1	—	1	29	8
Other Diseases	8	—	11	—	20	—	25	—	42	—	24	—	26	—	—	—	156	—
II.—LOCAL DISEASES.																		
Diseases of the—																		
1. Nervous System. Nervous Diseases	26	1	3	—	55	2	22	—	36	2	22	2	4	—	—	—	168	7
1. Nervous System. Mental "	1	—	2	1	5	—	1	—	4	—	2	—	2	—	—	—	17	1
2. Eye	11	—	5	—	48	—	45	—	18	—	26	—	4	—	—	—	157	—
3 & 4. Other Organs of Special Senses.	28	—	10	—	41	—	36	—	25	—	25	—	10	—	—	—	175	—
5. Circulatory System	11	—	—	—	18	1	22	—	6	—	10	2	5	—	—	—	72	3
6. Respiratory "	18	—	22	1	112	—	78	2	91	—	52	1	17	1	—	—	390	5
7. Digestive "	138	4	56	—	322	5	280	1	292	8	354	7	75	2	2	—	1,519	27
8. Lymphatic and Glandular System.	118	—	36	—	198	—	142	—	70	—	106	1	33	—	—	—	703	1
9. Urinary System	10	—	2	—	8	1	7	—	3	—	7	2	3	—	—	—	40	3
10. Generative "	133	—	8	—	256	—	206	—	141	—	178	—	14	—	—	—	936	—
11. Organs of Locomotion	10	—	4	—	25	—	15	—	23	—	25	—	5	—	—	—	107	—
12. Connective Tissues	24	—	17	—	60	—	51	—	45	—	45	—	5	—	1	—	248	—
13. Skin	72	—	51	—	172	—	137	—	169	—	178	—	31	—	—	—	810	—
III.—POISONS	—	—	—	—	2	—	1	—	2	—	1	1	—	—	—	—	6	1
IV.—INJURIES.																		
1. General	3	2	—	1	5	—	3	4	1	—	6	6	1	—	—	1	19	14
2. Local	75	—	91	—	366	2	258	2	221	—	213	—	41	—	—	—	1,265	4
3. In Action	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
No appreciable disease	3	—	1	—	4	—	2	—	5	—	8	—	—	—	—	—	23	—
Cause unknown (refers to deaths only).	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Total	1,199	16	642	8	3,929	26	3,405	33	2,680	18	3,717	45	753	9	16	4	16,341	15

OFFICER, showing the **PREVALENCE** and **MORTALITY** of the different Classes of **DISEASES COMMAND**, for the Year 1892, with the Ratios per 1,000 of the Strength.

Madras District.		Southern District.		Belgaum and Bangalore Districts.		Secunderabad District.		Rangoon District.		Myingyan and Mandalay Districts.		Depôts.		On the March.		Total.	
Ratio per 1,000 of Mean Strength.																	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	—	—	0·8	0·27	—	—	—	—	—	—	—	—	—	—	0·2	0.08
4·0	—	—	—	0·6	—	0·7	—	—	—	—	—	—	—	—	—	0·6	—
16·2	6·06	10·4	2·30	10·4	1·37	22·4	5·33	6·3	2·63	5·4	1·66	5·5	5·54	—	—	11·7	3·03
63·6	—	75·9	—	48·0	—	84·3	—	115·8	—	10·5	0·42	60·9	—	—	—	62·1	0·08
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1·0	1·01	—	—	1·4	1·37	—	—	—	—	0·4	—	—	—	40·0	40·0	0·6	0·53
15·2	—	17·3	1·15	33·7	0·27	71·5	1·78	62 7	1·58	29·2	1·67	60·9	1·84	200·0	40·0	44·1	1·21
1·0	—	—	—	10·1	—	44·8	—	—	—	—	—	—	—	—	—	12·4	—
101·0	7·07	103·6	3·45	105·0	3·28	223·7	7·11	184·8	4·21	45·5	3·75	127·3	7·38	240·0	80·0	131·8	4·93
98·0	1·01	25·3	—	56·2	0·27	79·7	—	112·7	—	589·1	4·59	208·5	—	240·0	—	174·0	0·99
—	—	3·5	—	0·3	0·27	0·7	—	—	—	—	—	3·7	—	—	—	0·6	0·08
32·3	—	82.8	—	148·0	—	148·3	—	170·6	—	114·3	—	108·9	—	—	—	130·3	—
61·6	—	25·3	—	80·0	—	58·3	0·36	102·2	—	50·1	—	226·9	—	—	—	74·0	0·08
112·1	—	94·4	—	127·8	—	154·0	—	135·8	—	126·0	—	81·2	—	—	—	128·7	—
206·0	—	202·5	—	355·8	—	360·6	0·36	408·6	—	290·4	—	417·0	—	—	—	333·9	0·08
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6·1	—	—	—	1·4	—	1·8	—	4·7	—	7·1	—	1·8	—	—	—	3·3	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13·1	—	9·2	—	2·7	0·27	2·5	—	2·6	—	3·3	—	12·9	—	—	—	4·4	0·08
47·5	—	9·2	—	11·8	—	42·0	—	10·0	—	37·9	0·83	42·4	—	—	—	26·5	0·15
40·4	—	16·1	1·15	44·7	—	24·9	—	56·3	—	40·9	—	55·4	1·84	40·0	—	40·0	0·15
3·0	1·01	2·3	1·15	1·1	—	1·8	1·06	2·6	—	1·7	0·42	11·1	1·84	—	40·0	2·2	0·60
8·1	—	12·7	—	5·5	—	8·9	—	22·1	—	10·0	—	48·0	—	—	—	11·8	—
26·3	1·01	3·5	—	15·1	0·55	7·8	—	19·0	1·06	9·2	0·83	7·4	—	—	—	12·7	0·53
1·0	—	2·3	1·15	1·4	—	0·3	—	2·1	—	0·8	—	3·7	—	—	—	1·3	0·08
11·1	—	5·8	—	13·2	—	16·0	—	9·5	—	10·8	—	7·4	—	—	—	11·9	—
28·3	—	11·5	—	11·2	—	12·8	—	13·2	—	10·4	—	18·5	—	—	—	13·3	—
11·1	—	—	—	4·9	0·27	7·8	—	3·2	—	4·2	0·83	9·2	—	—	—	5·5	0·22
18·2	—	25·3	1·15	30·7	—	27·7	0·71	47·9	—	21·7	0·42	31·4	1·84	—	—	29·6	0·38
139·4	4·04	64·4	—	88·2	1·37	99·6	0·36	153·8	4·21	147·7	2·92	138·4	3·69	80·0	—	115·2	2·05
119·2	—	41·4	—	54·3	—	50·5	—	36·9	—	44·2	0·42	60·9	—	—	—	53·3	0·08
10·1	—	2·3	—	2·2	0·27	2·5	—	1·6	—	2·9	0·83	5·5	—	—	—	3·0	0·22
134·3	—	9·2	—	70·2	—	73·3	—	74·3	—	74·3	—	25·8	—	—	—	71·0	—
10·1	—	4·6	—	6·8	—	5·3	—	12·1	—	10·4	—	9·2	—	—	—	8·1	—
24·2	—	19·6	—	16·4	—	18·2	—	23·7	—	18·8	—	9·2	—	40·0	—	18·8	—
72·7	—	58·7	—	47·1	—	48·7	—	89·0	—	74·3	—	57·2	—	—	—	61·4	—
—	—	—	—	0·6	—	0·3	—	1·1	—	0·4	0·42	—	—	—	—	0·5	0·08
3·0	2·02	—	1·15	1·4	—	1·1	1.42	0·5	—	2·5	2·50	1·8	—	—	40·0	1·4	1·06
75·9	—	104·7	—	100·3	0·55	91·7	0·71	116·4	—	88·9	—	75·6	—	—	—	96·0	0·30
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3·0	—	1·1	—	1·1	—	0·7	—	2·6	—	3·3	—	—	—	—	—	1·7	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1211·1	16·16	738·8	9·21	1049·6	7·13	1,210·9	11·73	1411·3	9·48	1550·7	18·77	1389·3	16·60	640·0	160·0	1232·0	12·06

ABSTRACT No. XXIV.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the AVERAGE STRENGTH, AVERAGE CONSTANTLY SICK, ADMISSIONS, DEATHS, and INVALIDS at the different STATIONS and DISTRICTS in the MADRAS COMMAND, for the Year 1892.

Districts.	Stations.	Average Strength.	Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalided.	Ratio per 1,000 of Strength.					
											Average of previous Period of 10 Years.	
							Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalided.	Admitted.	Died.
Madras District	Madras and Pallaveram.	694	56	784	14	28	80·69	1129·7	20·17	40·34	1362·9	15·33
	St. Thomas' Mount	296	23	415	2	8	77·70	1402·0	6·75	27·02	1411·7	12·45
	Total	990	79	1,199	16	36	79·80	1211·1	16·16	36·36	—	—
Southern District	Wellington Regiment.	513	22	284	5	—	42·88	553·6	9·74	—	1114·5*	5·09
	Cannanore	105	6	104	—	—	57·14	990·5	—	—	1053·6	7·49
	Calicut	101	7	97	—	2	69·31	960·4	—	19·80	1205·8	7·80
	Malapuram	150	10	157	3	—	66·66	1046·7	20·20	—	1340·6	10·49
	Total	869	45	642	8	2	51·78	738·8	9·21	2·30	—	—
Belgaum and Bangalore Districts	Bangalore	1,944	187	2,376	14	51	96·19	1222·2	7·20	26·23	1089·8	8·25
	Bellary	557	37	477	6	25	66·43	856·4	10·77	44·88	1421·4	7·96
	Belgaum	1,106	69	948	6	27	62·38	857·1	5·42	24·41	1043·3†	5·24
	Ramandroog	41	1	28	—	—	24·39	682·9	—	—	852·1‡	—
	Total	3,648	294	3,829	26	103	80·59	1049·6	7·13	28·23	—	—
Secunderabad District	Secunderabad	2,812	213	3,405	33	62	75·74	1210·9	11·73	22·05	1073·9	12·74
Rangoon District	Rangoon	919	105	1,163	7	62	114·25	1265·5	7·62	67·46	1354·3	15·25
	Meiktila	279	32	495	6	8	114·69	1774·2	21·50	28·67	1564·4	14·05
	Toungoo	555	42	917	4	17	75·67	1652·2	7·21	30·63	1181·1	14·55
	Port Blair	146	4	105	1	—	27·40	719·2	6·85	—	963·5	9·29
	Total	1,899	183	2,680	18	87	96·36	1411·3	9·48	45·81	—	—

* Five years 1887 to 1891. † Seven years, 1885 to 1891. ‡ Four years, 1885–6 to 1890–91.

ABSTRACT No. XXIV.—*continued.*

Districts.	Stations.	Average Strength.	Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalided.	Ratio per 1,000 of Strength. Average constantly Sick.	Admitted.	Died in and out of Hospital.	Invalided.	Average of previous Period of 10 Years. Admitted.	Died.
Myingyan and Mandalay Districts - -	Mandalay - -	771	76	1,188	16	11	98·57	1540·9	20·75	14·27	1993·2*	25·89
	Bhamo - -	244	18	412	1	9	73·77	1688·5	4·09	36·88	2781·8*	34·37
	Myingyan - -	201	31	488	14	17	154·22	2427·9	69·65	84·57	1941·5*	39·35
	Shwebo - -	391	27	466	2	25	69·05	1191·8	5·11	63·94	1791·3*	15·71
	Bernardmyo -	207	16	262	4	6	77·29	1265·7	19·32	28·98	1228·9*	22·73
	Thayetmyo -	565	41	848	7	12	72·56	1500·9	12·39	21·24	1397·2	13·62
	Fort White -	7	1	14	1	—	142·85	2000·0	142·85	—	—	—
	Maymyo - -	11	1	39	—	—	90·90	3545·4	—	—	—	—
	Total -	2,397	211	3,717	45	80	88·03	1550·7	18·77	33·37	—	—
Depôts - -	Poonamallee -	107	25	211	3	33	233·64	1972·0	28·03	308·41	2192·9	45·65
	Wellington -	435	45	542	6	34	103·45	1246·0	13·79	78·16	1255·7	9·72
	Total -	542	70	753	9	67	129·15	1389·3	16·60	123·61	—	—
Marching - -	On the March -	25	3	16	4	—	120·00	640·0	160·00	—	1279·6	49·62

* Four years, 1888 to 1891.

ABSTRACT No. XXV.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the MADRAS COMMAND at which the ADMISSIONS and DEATHS from ENTERIC FEVER took place in each of the four quarters of the Year 1892.

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Madras District	Madras -	4	1	1	1	9	3	1	—	15	5
	St. Thomas' Mount.	—	—	—	—	1	1	—	—	1	1
Southern District - -	Wellington -	—	—	3	1	7	3	—	—	10	4
	Calicut -	—	—	—	—	1	—	—	—	1	—
	Malapuram	—	—	1	1	—	—	—	—	1	1
Belgaum and Bangalore Districts - -	Bangalore -	6	1	15	1	10	2	2	—	33	4
	Bellary -	3	—	—	—	—	—	—	—	3	—
	Belgaum -	2	1	—	—	—	—	—	—	2	1
Secunderabad District.	Secunderabad	4	1	—	—	42	13	17	1	63	15
Rangoon District - -	Rangoon -	—	—	2	—	2	—	—	—	4	—
	Meiktila -	—	—	—	—	5	2	1	2	6	4
	Toungoo -	—	—	1	1	1	—	—	—	2	1
Myingyan and Mandalay Districts - -	Mandalay -	—	—	—	—	3	—	—	—	3	—
	Thayetmyo -	—	—	1	—	2	—	2	—	5	—
	Bhamo -	—	—	—	—	2	1	—	—	2	1
	Myingyan -	—	—	—	—	2	2	—	—	2	2
	Fort White	—	—	1	1	—	—	—	—	1	1
	Total -	19	4	25	6	87	27	23	3	154	40

ABSTRACT No. XXVI.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the MADRAS COMMAND at which the ADMISSIONS and DEATHS from CHOLERA took place in each of the four quarters of the Year 1892.

Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Madras District -	Madras -	—	—	1	1	—	—	—	—	1	1
Belgaum and Bangalore Districts - -	Bellary -	—	—	—	—	5	5	—	—	5	5
Myingyan and Mandalay Districts - -	Thayetmyo	—	—	—	—	1	—	—	—	1	—
Marching -	On the March	1	1	—	—	—	—	—	—	1	1
	Total -	1	1	1	1	6	5	—	—	8	7

ABSTRACT No. XXVII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the prevalence of DYSENTERY, DIARRHŒA, and HEPATITIS in each of the DISTRICTS in the MADRAS COMMAND for 1892.

Districts.	Madras District.		Southern. District.		Belgaum and Bangalore Districts.		Secundera-bad District.		Rangoon District.		Myingyan and Mandalay Districts.		On the March.		Total.	
Strength.	1,097		1,304		3,648		2,812		1,899		2,397		25		13,182	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Dysentery - - - - - -	30	—	33	2	123	1	201	5	119	3	70	4	5	1	581	16
Diarrhœa - - - - - -	20	—	—	—	12	—	55	—	1	—	16	—	1	—	105	—
Hepatitis and Abscess of Liver - -	20	5	11	—	25	2	35	—	26	6	9	1	—	—	126	14
Total - - - -	70	5	44	2	160	3	291	5	146	9	95	5	6	1	812	30
Ratio per 1,000 of Strength.																
Dysentery - - - - -	27·4	—	25·3	1·53	33·7	·27	71·5	1·78	62·7	1·58	29·2	1·67	200·0	40·00	44·1	1·21
Diarrhœa - - - - - -	18·2	—	—	—	3·3	—	19·6	—	0·5	—	6·7	—	40·0	—	8·0	—
Hepatitis and Abscess of Liver - -	18·2	4·56	8·4	—	6·9	·55	12·4	—	13·7	3·16	3·7	·42	—	—	9·5	1·06
Total - - - - -	63·8	4·56	33·7	1·53	43·9	·82	103·5	1·78	76·8	4·74	39·6	2·08	240·0	40·00	61·6	2·27

ABSTRACT No. XXVIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE and MORTALITY in the MADRAS COMMAND, due to DYSENTERY, DIARRHŒA, and HEPATITIS, in each Quarter of the Year 1892.

—		Dysentery.				Diarrhœa.				Hepatitis (including Abscess of Liver).				Total.			
		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.		Number.		Ratio per 1,000 of Strength.	
	Strength.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1st Quarter -	12,223	78	—	6·3	—	24	—	2·0	—	24	2	2·0	0·16	126	2	10·3	0·16
2nd „ -	13,694	108	4	7·9	·29	25	—	1·8	—	22	5	1·6	·36	155	9	11·3	0·65
3rd „ -	13,880	283	7	20·4	·50	41	—	2·9	—	42	4	3·0	·30	366	11	26·3	0·80
4th „ -	12,929	112	5	8·7	·39	15	—	1·2	—	38	3	2·9	·23	165	8	12·8	0·62
Total for the Year	13,182	581	16	44·1	1·21	105	—	8·0	—	126	14	9·5	1·06	812	30	61·6	2·27

**ABSTRACT No. XXIX.—Table showing the Average Strength, Admis-
Sick among the Troops stationed in Bombay during the Year 1892, with**

Average Strength, 12,702.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
Group "A."							
Sub-Group I. Small-pox	7	2	—	2	—	—	·47
Other Eruptive Fevers	4	—	—	—	—	—	·23
Enteric Fever	222	64	—	64	2	1	30·55
Other Continued Fevers	1,091	1	—	1	—	—	38·38
Yellow Fever	—	—	—	—	—	—	—
Cholera	16	12	—	12	—	—	·20
Dysentery	239	1	3	4	6	2	14·16
Other Diseases	93	1	—	1	—	—	3·27
Total	1,672	81	3	84	8	3	87·26
Sub-Group II.—Malarial Fevers	6,791	4	—	4	19	4	178·52
Sub-Group III.—Septic Diseases	13	1	1	2	—	—	·94
Sub-Group IV. Syphilis, Primary	1,414	—	—	—	1	—	104·42
„ Secondary	640	1	—	1	19	11	48·40
Gonorrhœa	2,031	—	—	—	2	1	136·84
Total	4,085	1	—	1	22	12	289·66
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
Group "B."							
Sub-Group I.—Parasitic Diseases	58	1	—	1	—	—	1·36
Sub-Group II. Scurvy	10	—	—	—	—	—	·46
Alcoholism	34	1	—	1	—	—	·85
Group "C."							
Debility, &c	549	1	—	1	54	18	28·74
Group "D."							
Rheumatism	353	2	—	2	6	5	17·84
Tubercular Diseases	66	9	6	15	16	7	5·11
Other Diseases	157	1	1	2	8	3	10·19
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System Nervous Diseases	107	4	—	4	10	7	5·43
Mental „	24	1	—	1	14	17	2·86
2. Eye	150	—	—	—	9	5	10·23
3 & 4. Other Organs of Special Senses	201	—	—	—	10	13	9·34
5. Circulatory System	137	4	—	4	22	22	9·11
6. Respiratory „	343	6	1	7	8	4	18·59
7. Digestive „	1,631	17	2	19	24	11	59·19
8. Lymphatic and Glandular System	488	—	—	—	2	—	54·39
9. Urinary System	34	3	1	4	8	3	4·28
10. Generative „	705	—	—	—	3	3	40·86
11. Organs of Locomotion	103	—	—	—	4	4	5·79
12. Connective Tissue	263	1	—	1	—	—	10·45
13. Skin	938	—	—	—	3	—	36·10
III.—POISONS	14	1	—	1	—	—	·72
IV.—INJURIES.							
1. General	45	16	—	16	3	—	1·69
2. Local	1,279	9	—	9	18	8	60·16
3. In Action	—	—	—	—	—	—	—
No appreciable disease	22	—	—	—	—	—	1·47
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	20,252	164	15	179	271	149	951·59
* Average of 10 years, 1882–91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the seven
in that for

SIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY the Ratios per 1,000 of the Strength and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
·5	·16	—	—	·04	1·1	·07	—	—	·09
·3	—	—	—	·02	·5	·01	—	—	·04
17·4	5·04	·16	·08	2·40	13·6	4·17	·04	—	1·69
85·9	·08	—	—	3·02	77·0	·10	·04	—	3·07
—	—	—	—	—	—	—	—	—	—
1·2	·94	—	—	·01	1·9	1·32	—	—	·03
18·8	·31	·47	·16	1·11	21·8	·69	·88	·19	1·39
7·3	·08	—	—	·26	4·0	·01	—	—	·09
131·6	6·61	·63	·24	6·87	119·9	6·37	·96	·19	6·41
534·7	·31	1·49	·31	14·05	328·2	·40	1·47	·15	9·83
1·0	·16	—	—	·07	·8	·07	·01	—	·04
111·3	—	·08	—	8·22	135·6	—	·01	—	10·59
50·4	·08	1·49	·86	3·81	43·2	·04	1·94	·96	3·77
159·9	—	·16	·08	10·77	166·5	—	·16	·04	11·35
321·6	·08	1·73	·94	22·80	345·3	·04	2·12	1·00	25·71
—	—	—	—	—	—	·03	—	—	—
4·6	·08	—	—	·11	4·3	—	·04	—	·14
·8	—	—	—	·04	1·0	—	·05	—	·06
2·7	·08	—	—	·07	8·2	·16	·01	—	·21
43·2	·08	4·25	1·42	2·26	31·3	·01	5·26	1·87	1·87
26·2	·16	·47	·39	1·40	25·0	·07	1·06	·34	1·65
5·2	1·18	1·26	·55	·40	4·0	·85	1·60	1·13	·58
12·3	·16	·63	·24	·80	14·7	·15	·80	·18	·87
8·4	·31	·78	·55	·43	10·4	·32	1·32	·87	·63
1·9	·08	1·10	1·34	·22	3·5	—	1·24	1·43	·41
11·8	—	·71	·39	·80	14·9	—	·88	·77	·92
15·8	—	·78	1·02	·73	14·9	—	1·31	·83	·80
10·8	·31	1·73	1·73	·72	13·6	·32	3·04	2·15	1·23
27·0	·55	·63	·31	1·46	28·0	·69	1·00	·56	1·69
128·4	1·50	1·89	·86	4·66	128·2	1·53	2·23	·72	5·10
38·4	—	·16	—	4·28	30·6	·03	·29	·19	2·96
2·7	·31	·63	·24	·34	2·0	·15	·32	·21	·20
55·5	—	·24	·24	3·22	58·8	·03	·36	·23	3·38
8·1	—	·31	·31	·45	6·5	·03	·80	·55	·54
20·7	·08	—	—	·82	18·2	—	·05	·01	·79
73·8	—	·24	—	2·84	69·0	—	·22	·02	2·83
1·1	·08	—	—	·06	·6	·05	—	—	·02
3·5	1·26	·24	—	·13	2·5	1·40	·11	·15	·13
100·7	·71	1·42	·63	4·73	105·7	·02	1·08	·65	4·37
—	—	—	—	—	—	—	—	·04	—
1·7	—	—	—	·11	1·4	—	—	—	·06
—	—	—	—	—	—	—	—	—	—
1594·4	14·09	21·34	11·73	74·92	1392·8	13·42	27·62	14·27	73·46
1386·4	14·75	29·73	13·31	69·36	—	—	—	—	—

---

years 1886 to 1892 will be given in the Report for 1893; those for the eight years 1886 to 1893
1894, &c., &c.

ABSTRACT No. XXX.—TABLE taken from the REPORT of the PRINCIPAL MEDICAL in each of the MILITARY DISTRICTS in the BOMBAY COMMAND.

Military Districts.	Bombay, Deesa, & Aden.		Sind.		Poona.		Mhow.		Nag-pur.		On the March.		Total.	
Average Strength	3,422		1,496		3,791		3,000		930		63		12,702	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I.—GENERAL DISEASES.														
GROUP "A."														
Sub-Group I. Small-pox	—	—	—	—	—	—	7	2	—	—	—	—	7	2
Other Eruptive Fevers	—	—	1	—	1	—	2	—	—	—	—	—	4	—
Enteric Fever	31	8	32	6	103	33	45	14	11	3	—	—	222	64
Other Continued Fevers	499	—	269	1	244	—	63	—	16	—	—	—	1,091	1
Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera	1	1	8	5	7	6	—	—	—	—	—	—	16	12
Dysentery	64	—	43	—	69	1	51	—	11	—	1	—	239	1
Other Diseases	4	—	1	—	20	—	17	—	51	1	—	—	93	1
Total	599	9	354	12	444	40	185	16	89	4	1	—	1,672	81
Sub-Group II.—Malarial Fevers	2,568	3	785	—	1,056	—	1,900	—	478	1	4	—	6,791	4
Sub-Group III.—Septic Diseases	4	—	2	1	3	—	3	—	1	—	—	—	13	1
Sub Group IV. Syphilis, Primary	406	—	213	—	530	—	147	—	118	—	—	—	1,414	—
„ Secondary	218	—	39	—	175	1	106	—	102	—	—	—	640	1
Gonorrhœa	579	—	111	—	571	—	555	—	215	—	—	—	2,031	—
Total	1,203	—	363	—	1,276	1	808	—	435	—	—	—	4,085	1
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GROUP "B."														
Sub-Group I.—Parasitic Diseases	24	—	13	—	6	—	13	1	2	—	—	—	58	1
Sub-Group II. Scurvy	3	—	3	—	—	—	3	—	1	—	—	—	10	—
Alcoholism	21	—	2	1	4	—	5	—	2	—	—	—	34	1
GROUP "C."														
Debility, &c.	216	1	89	—	99	—	111	—	34	—	—	—	549	1
GROUP "D."														
Rheumatism	108	—	39	—	69	1	64	—	62	1	—	—	333	2
Tubercular Diseases	26	2	24	4	10	3	4	—	2	—	—	—	66	9
Other Diseases	40	—	25	—	30	—	44	1	18	—	—	—	157	1
II.—LOCAL DISEASES.														
Diseases of the—														
1. Nervous System Nervous Diseases	43	1	17	2	9	—	33	1	5	—	—	—	107	4
Mental „	13	1	4	—	4	—	1	—	2	—	—	—	24	1
2. Eye	30	—	39	—	37	—	37	—	7	—	—	—	150	—
3 & 4. Other Organs of Special Senses	70	—	34	—	26	—	47	—	24	—	—	—	201	—
5. Circulatory System	37	1	32	1	32	2	28	—	8	—	—	—	137	4
6. Respiratory „	109	2	64	1	94	2	61	1	15	—	—	—	343	6
7. Digestive „	435	6	182	2	372	4	513	4	129	1	—	—	1,631	17
8. Lymphatic and Glandular System	164	—	66	—	108	—	93	—	56	—	1	—	488	—
9. Urinary System	12	2	4	—	5	1	12	—	1	—	—	—	34	3
10. Generative „	242	—	24	—	93	—	250	—	96	—	—	—	705	—
11. Organs of Locomotion	42	—	11	—	31	—	14	—	5	—	—	—	103	—
12. Connective Tissues	94	—	44	1	67	—	43	—	15	—	—	—	263	1
13. Skin	321	—	216	—	130	—	202	—	69	—	—	—	938	—
III.—POISONS	12	1	2	—	—	—	—	—	—	—	—	—	14	1
IV.—INJURIES.														
1. General	20	7	15	6	8	1	2	1	—	—	—	1	45	16
2. Local	396	3	186	—	268	4	342	2	87	—	—	—	1,279	9
3. In Action	—	—	—	—	—	—	—	—	—	—	—	—	—	—
No appreciable disease	3	—	8	—	7	—	3	—	1	—	—	—	22	—
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Total	6,855	39	2,647	31	4,279	59	4,821	27	1,644	7	6	1	20,252	164

OFFICER showing the PREVALENCE and MORTALITY of the Different Classes of DISEASE with the Ratios per 1,000 of Strength during the Year 1892.

Bombay, Deesa, and Aden.		Sind.		Poona.		Mhow.		Nagpur.		On the March		Total.	
Ratio per 1,000 of Strength.													
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	—	—	—	—	2·3	—	—	—	—	—	·5	·16
—	—	·7	—	·3	—	·7	·67	—	—	—	—	·3	—
9·0	2·34	21·4	4·01	27·2	8·70	15·0	—	11·8	3·22	—	—	17·4	5·04
145·8	—	179·8	·67	64·4	—	21·0	4·67	17·1	—	—	—	85·9	·08
—	—	—	—	—	—	—	—	—	—	—	—	—	—
·3	·29	5·3	3·34	1·8	1·58	—	—	—	—	—	—	1·2	·94
18·7	—	28·7	—	18·2	·26	17·0	—	11·8	—	15·9	—	18·8	·08
1·2	—	·7	—	5·3	—	5·7	—	54·8	1·07	—	—	7·3	·08
175·0	2·63	236·6	8·02	117·2	10·54	61·7	5·34	95·5	4·29	15·9	—	131·6	6·38
750·4	·88	524·7	—	278·5	—	633·3	—	514·0	1·07	63·5	—	534·7	·31
1·2	—	1·3	·67	·8	—	1·0	—	1·1	—	—	—	1·0	·08
118·6	—	142·4	—	139·8	—	49·0	—	126·9	—	—	—	111·3	—
63·7	—	26·1	—	46·2	·26	35·3	—	109·7	—	—	—	50·4	·08
169·2	—	74·2	—	150·6	—	185·0	—	231·2	—	—	—	159·9	—
351·5	—	242·7	—	336·6	·26	269·3	—	467·8	—	—	—	321·6	·08
—	—	—	—	—	—	—	—	—	—	—	—	—	—
7·0	—	8·7	—	1·6	—	4·3	·33	2·1	—	—	—	4·6	·08
·9	—	2·0	—	—	—	1·0	—	1·1	—	—	—	·8	—
6·1	—	1·3	·67	1·0	—	1·7	—	2·1	—	—	—	2·7	·08
63·1	·29	59·5	—	26·1	—	37·0	—	36·5	—	—	—	43·2	·16
31·5	—	26·1	—	15·8	·26	21·3	—	66·7	1·07	—	—	26·2	·16
7·6	·58	16·0	2·67	2·6	·79	1·3	—	2·1	—	—	—	5·2	·71
11·7	—	16·7	—	7·9	—	14·7	·33	19·3	—	—	—	12·3	·08
12·6	·29	11·4	1·34	2·4	—	11·0	·33	5·4	—	—	—	8·4	·31
3·8	·29	2·7	—	1·0	—	·3	—	2·1	—	—	—	1·9	·08
8·8	—	26·1	—	9·7	—	12·3	—	7·5	—	—	—	11·8	—
20·4	—	22·7	—	6·8	—	15·7	—	25·8	—	—	—	15·8	—
10·8	·29	21·4	·67	8·4	·53	9·3	—	8·6	—	—	—	10·8	·31
31·8	·58	42·8	·67	24·8	·53	20·3	·33	16·1	—	—	—	27·0	·47
127·1	1·75	121·6	1·34	98·1	1·05	171·0	1·33	138·7	1·07	—	—	128·4	1·34
47·9	—	44·1	—	28·5	—	31·0	—	60·2	—	15·9	—	38·4	—
3·5	·58	2·7	—	1·3	·26	4·0	—	1·1	—	—	—	2·7	·24
70·9	—	16·0	—	24·5	—	83·3	—	103·2	—	—	—	55·5	—
12·3	—	7·3	—	8·2	—	4·7	—	5·4	—	—	—	8·1	—
27·5	—	29·4	·67	17·7	—	14·3	—	16·1	—	—	—	20·7	·08
93·8	—	144·4	—	34·3	—	67·3	—	74·2	—	—	—	73·8	—
3·5	·29	1·3	—	—	—	—	—	—	—	—	—	1·1	·08
5·8	2·04	10·0	4·01	2·1	·26	·7	·33	—	—	—	15·87	3·5	1·26
115·7	·88	124·3	—	70·7	1·05	114·0	·67	93·5	—	—	—	100·7	·71
—	—	—	—	—	—	—	—	—	—	—	—	—	—
·9	—	5·3	—	1·8	—	1·0	—	1·1	—	—	—	1·7	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
2003·2	11·40	1769·4	20·72	1128·7	15·56	1607·0	9·00	1767·7	7·53	95·2	15·87	1594·4	12·91

ABSTRACT No. XXXI.—The following **Table**, taken from the **Report** of the **Principal Medical Officer**, shows the **Admissions** and **Deaths** which took place in the **Principal Stations** in the **Bombay Command** during the Year 1892.

Divisions and Districts.	Stations.	Average Annual Strength.	Number of Admissions.	Number of Deaths.	Ratio per 1,000 of the Strength.			
					Admissions.	Deaths.	Average of 10 Years. 1882–91.	
							Admissions.	Deaths.
Bombay, Deesa, and Aden.	Colaba	1,012	1,828	13	1806·3	12·85	1321·0	9·61
	Butcher's Island	15	26	—	1733·3	—	—	—
	Deolali	726	1,334	6	1837·5	8·26	1141·5	39·31
	Ahmedabad	245	649	5	2649·0	20·41	1776·0	14·30
	Deesa	345	614	7	1779·7	20·29	1368·6	8·69
	Aden	905	2,200	7	2430·9	7·73	1256·2	13·53
Poona	Poona	1,969	2,278	27	1156·9	13·71	1114·8	8·69
	Kirkee	828	885	18	1068·8	21·74	1107·7	5·70
	Ahmednagar	671	626	12	932·9	17·88	1532·1	9·73
	Satara	198	264	1	1333·3	5·05	1467·4	5·75
Mhow	Mhow	1,583	2,246	9	1418·8	5·69	1530·8	11·70
	Nasirabad	753	1,356	10	1800·8	13·28	1514·7	20·92
	Neemuch	518	991	5	1913·1	9·65	1538·3	21·62
	Indore	110	144	—	1309·1	—	1818·8	20·78
	Khundwa	2	1	—	500·0	—	—	—
Nagpur	Kamptee	875	1,545	7	1765·7	8·00	*1407·0	*14·45
	Sitabuldi	55	99	—	1800·0	—	*1834·0	*18·91
Sind	Karachi	1,054	1,829	20	1735·8	18·98	1652·0	13·79
	Hyderabad	442	818	11	1850·7	24·88	1604·4	8·38
	Sanitaria	333	513	5	1540·5	15·01	1332·5	12·49
	Troops moving	63	6	1	95·2	15·87	538·1	16·25
	Total	12702	20252	164	1594·4	12·91	—	—

* For three years.

ABSTRACT No. XXXII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BOMBAY COMMAND at which the ADMISSIONS and DEATHS from ENTERIC FEVER took place in each of the Four Quarters of the Year 1892.

Divisions and Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Poona	Poona	17	5	3	1	37	11	4	1	61	18
	Kirkee	3	—	3	2	16	5	2	2	24	9
	Ahmednagar	3	1	11	3	3	1	—	—	17	5
	Purandhar	—	1	—	—	1	—	—	—	1	1
Mhow	Mhow	—	—	16	2	5	—	1	1	22	3
	Nasirabad	4	2	2	—	5	1	3	4	14	7
	Neemuch	1	1	2	—	1	—	—	—	4	1
	Indore	—	—	—	—	—	—	1	—	1	—
	Taragarh	—	—	—	—	3	3	1	—	4	3
Bombay, Deesa, and Aden	Colaba	2	—	—	—	—	—	3	2	5	2
	Deolali	1	—	3	—	3	—	1	—	8	—
	Deesa	2	—	—	—	2	1	2	1	6	2
	Ahmedabad	1	1	3	1	1	—	2	1	7	3
	Abu	—	—	—	—	2	1	—	—	2	1
	Aden	—	—	—	—	—	—	3	—	3	—
Sind	Karachi	4	—	3	—	16	3	2	1	25	4
	Hyderabad	4	—	—	—	3	2	—	—	7	2
Nagpur	Kamptee	1	1	3	—	5	2	2	—	11	3
	Total	43	12	49	9	103	30	27	13	222	64

ABSTRACT No. XXXIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the STATIONS in the BOMBAY COMMAND at which the ADMISSIONS and DEATHS from CHOLERA took place in each of the Four Quarters of the Year 1892.

Divisions and Districts.	Stations.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Total.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Poona	Kirkee	—	—	—	—	3	2	—	—	3	
	Ahmednagar	—	—	3	3	1	1	—	—	4	4
Bombay, Deesa, and Aden.	Deolali	—	—	—	—	1	1	—	—	1	1
Sind	Karachi	—	—	—	—	6	3	—	—	6	3
	Hyderabad	—	—	—	—	2	2	—	—	2	2
	Total	—	—	3	3	13	9	—	—	16	12

ABSTRACT No. XXXIV.—Table, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE of DYSENTERY, DIARRHŒA, HEPATITIS, and ABSCESS OF LIVER in each DISTRICT in the BOMBAY COMMAND for the Year 1892.

Districts.	Bombay, Deesa, and Aden.		Sind.		Poona.		Mhow.		Nagpur.		On the March.		Total.	
Strength.	3,422		3,791		3,000		930		1,496		63		12,702	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Dysentery - -	64	—	69	1	51	—	11	—	43	—	1	—	239	1
Diarrhœa - -	121	—	96	—	163	1	25	—	60	1	—	—	465	2
Hepatitis and Abscess of Liver.	53	3	18	1	43	3	13	—	11	1	—	—	138	8
Total -	238	3	183	2	257	4	49	—	114	2	1	—	842	11

Ratio per 1,000 of Mean Strength.

Dysentery - -	18·7	—	18·2	·26	17·0	—	11·8	—	28·7	—	15·9	—	18·8	·08
Diarrhœa - -	35·3	—	25·3	—	54·3	·33	26·9	—	40·1	·67	—	—	36·6	·16
Hepatitis and Abscess of Liver.	15·5	·88	4·7	·26	14·3	1·00	14·0	—	7·3	·67	—	—	10·9	·63
Total -	69·5	·88	48·2	·53	85·7	1·33	52·7	—	76·2	1·34	15·9	—	66·3	·86

ABSTRACT No. XXXV.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the PREVALENCE and MORTALITY in the BOMBAY COMMAND, due to DYSENTERY, DIARRHŒA, HEPATITIS, and ABSCESS OF LIVER in each Quarter of the Year 1892.

Quarter.	Strength.	Dysentery.				Diarrhœa.				Hepatitis and Abscess of Liver.				Total.			
		Number.		Ratio per 1,000 of the Strength.		Number.		Ratio per 1,000 of the Strength.		Number.		Ratio per 1,000 of the Strength.		Number.		Ratio per 1,000 of the Strength.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1st Quarter -	12,623	47	1	3·7	·08	70	—	5·5	—	39	2	3·1	·16	156	3	12·4	·24
2nd " -	12,552	43	—	3·4	—	95	1	7·6	·08	33	1	2·6	·08	171	2	13·6	·16
3rd " -	12,478	101	—	8·1	—	186	—	14·9	—	38	3	3·0	·24	325	3	26·0	·24
4th " -	13,150	48	—	3·6	—	114	1	8·7	·08	28	2	2·1	·15	190	3	14·4	·23
Total -	12,702	239	1	18·8	·08	465	2	36·6	·16	138	8	10·9	·63	842	11	66·3	·86

ABSTRACT No. XXXVI.—Table showing the Average Strength, Sick among the Troops stationed in Egypt during the Year 1892, with

Average Strength, 3,102.	Admissions into Hospital.	Deaths.			Invalids.		Average Number constantly Sick.
Diseases.		In the Command.	Of Invalids.	Total.	Number sent Home.	Number finally Discharged the Service.	
I.—GENERAL DISEASES.							
Group "A."							
Sub-Group I. Small-pox	2	—	—	—	—	—	·24
Other Eruptive Fevers	8	—	—	—	—	—	·63
Enteric Fever	109	32	—	32	7	—	19·98
Other Continued Fevers	372	—	—	—	—	—	17·27
Yellow Fever	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—
Dysentery	46	—	—	—	1	—	3·29
Other Diseases	24	—	—	—	—	—	·80
Total	561	32	—	32	8	—	42·21
Sub-Group II.—Malarial Fevers	76	—	—	—	—	—	2·38
Sub-Group III.—Septic Diseases	2	—	—	—	—	—	·11
Sub-Group IV. Syphilis, Primary	132	—	—	—	—	—	13·57
„ Secondary	137	—	—	—	9	1	13·89
Gonorrhœa	342	—	—	—	1	1	25·80
Total	611	—	—	—	10	2	53·26
Sub-Group V.—Hydrophobia, &c.	—	—	—	—	—	—	—
Group "B."							
Sub-Group I.—Parasitic Diseases	25	—	—	—	—	—	·87
Sub-Group II. Scurvy	—	—	—	—	—	—	—
Alcoholism	9	2	—	2	—	—	·30
Group "C."							
Debility, &c.	63	—	—	—	11	1	6·96
Group "D."							
Rheumatism	70	—	—	—	3	1	4·58
Tubercular Diseases	2	—	—	—	1	3	·64
Other Diseases	38	—	—	—	3	—	2·61
II.—LOCAL DISEASES.							
Diseases of the—							
1. Nervous System, Nervous Diseases	36	3	—	3	4	1	2·31
Mental „	5	—	—	—	7	7	1·62
2. Eye	119	—	—	—	1	—	6·24
3 & 4. Other Organs of Special Senses	48	—	—	—	—	1	3·23
5. Circulatory System	31	1	—	1	11	9	3·04
6. Respiratory „	151	—	—	—	3	1	7·48
7. Digestive „	433	3	—	3	6	2	19·35
8. Lymphatic and Glandular System	26	—	—	—	—	—	2·81
9. Urinary System	7	—	—	—	—	—	·58
10. Generative „	316	—	—	—	—	—	23·37
11. Organs of Locomotion	48	—	—	—	2	1	3·78
12. Connective Tissue	51	—	—	—	—	—	2·90
13. Skin	166	—	—	—	1	—	7·50
III.—POISONS	—	—	—	—	—	—	—
IV.—INJURIES.							
1. General	1	3	—	3	—	—	·01
2. Local	258	—	—	—	3	1	12·11
3. In Action	—	—	—	—	—	—	—
No appreciable disease	9	—	—	—	—	—	·19
Cause unknown (refers to deaths only)	—	—	—	—	—	—	—
General Total	3,162	44	—	44	74	30	210·44
* Average of 9 years, 1883-91	—	—	—	—	—	—	—

† The average ratios for 10 years will be given in future years. The average ratios for the 1886 to 1893 in

ADMISSIONS into HOSPITAL, DEATHS, NUMBERS INVALIDED and CONSTANTLY
the Ratios per 1,000 of the Strength, and the Average Ratios for 10 Years.*

Ratio per 1,000.					Average Ratio per 1,000 from 1886 to 1891.†				
Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.	Admissions.	Deaths.	Invalids sent Home.	Invalids finally Discharged.	Constantly Sick.
·6	—	—	—	·08	4·6	·58	—	—	·47
2·5	—	—	—	·20	1·8	—	—	—	·13
35·1	10·31	2·26	—	6·44	43·7	11·67	11·70	·03	6·85
119·9	—	—	—	5·57	146·0	·03	2·27	—	5·68
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
14·8	—	·32	—	1·06	50·4	1·90	4·03	·31	3·89
7·7	—	—	—	·26	3·3	·03	—	—	·11
180·3	10·31	2·58	—	13·61	249·8	14·21	18·00	·34	17·13
24·5	—	—	—	·77	12·9	—	·34	·07	·57
·6	—	—	—	·03	1·8	·14	·07	—	·11
42·5	—	—	—	4·37	67·8	—	·14	—	5·33
44·2	—	2·90	·32	4·48	30·4	—	·91	·51	2·52
110·3	—	·32	·32	8·32	99·9	—	·10	—	6·12
197·0	—	3·22	·64	17·17	198·1	—	1·15	·51	14·02
—	—	—	—	—	—	—	—	—	—
8·1	—	—	—	·28	4·5	·03	—	—	·11
—	—	—	—	—	·1	—	—	—	·01
2·9	·64	—	—	·10	6·5	·07	·03	—	·23
20·3	—	3·53	·32	2·24	31·9	—	6·07	2·75	2·00
22·6	—	·97	·32	1·48	24·7	·20	1·49	·30	1·70
·6	—	·32	·97	·21	3·2	·71	2·24	1·70	·68
12·2	—	·97	—	·84	10·1	·03	·24	·10	·58
11·6	·97	1·29	·32	·75	7·8	·41	1·39	1·15	·51
1·6	—	2·26	2·26	·52	1·6	·03	1·42	1·90	·28
38·4	—	·32	—	2·01	48·7	—	·92	·51	1·93
15·5	—	—	·32	1·04	13·9	—	·68	·68	·71
10·0	·32	3·55	2·90	·98	15·0	·27	4·65	4·75	1·55
48·7	—	·97	·32	2·41	31·6	·98	1·49	·95	2·19
139·6	·97	1·93	·64	6·24	153·7	1·63	3·32	1·05	6·06
8·4	—	—	—	·91	22·2	—	·54	·17	2·58
2·2	—	—	—	·19	1·9	·07	·24	·20	·13
101·9	—	—	—	7·53	87·6	—	·34	·34	5·89
15·5	—	·64	·32	1·22	6·9	—	·44	·54	·46
16·4	—	—	—	·93	27·2	—	·31	·07	1·32
53·5	—	·32	—	2·42	56·2	—	·24	—	2·51
—	—	—	—	—	·4	·14	—	—	·01
·3	·97	—	—	—	3·0	1·86	·20	·03	·18
83·2	—	·97	·32	3·90	91·3	·95	1·25	·75	4·20
—	—	—	—	—	—	·07	·27	·20	·09
2·9	—	—	—	·06	3·5	—	—	—	·11
—	—	—	—	—	—	—	—	—	—
1019·3	14·18	23·86	9·67	67·84	1116·1	21·80	47·33	19·06	67·85
1210·5	23·73	71·97	25·74	72·37	—	--	—	—	—

seven years 1886 to 1892 will be given in the Report for 1893; those for the eight years
that for 1894, &c., &c.

ABSTRACT No. XXXVII.—Table showing the Average Strength, Ship proceeding on and returning from Foreign Service, and proceeding Strength during the Year 1892.

Strength of W.O., N.C.O., and Men:	Passage Out.		Passage Home.	
Embarked	19,731		14,350	
Average Annual Strength	1,318		1,042	
	Admitted.	Died.	Admitted.	Died.
I.—GENERAL DISEASES.				
GROUP "A."				
Sub-Group I. Small-pox	—	—	—	—
Sub-Group I. Other Eruptive Fevers	2	—	—	—
Sub-Group I. Enteric Fever	1	1	5	2
Sub-Group I. Other Continued Fevers	12	—	40	—
Sub-Group I. Yellow Fever	—	—	2	—
Sub-Group I. Cholera	—	—	—	—
Sub-Group I. Dysentery	—	—	10	—
Sub-Group I. Other Diseases	19	—	10	—
Total	34	1	67	2
Sub-Group II.—Malarial Fevers	1	—	180	1
Sub-Group III.—Septic Diseases	2	—	1	—
Sub-Group IV. Syphilis, Primary	192	—	141	—
Sub-Group IV. „ Secondary	55	—	77	—
Sub-Group IV. Gonorrhœa	428	—	218	—
Total	675	—	436	—
Sub-Group V.—Hydrophobia, &c.	—	—	—	—
GROUP "B."				
Sub-Group I.—Parasitic Diseases	—	—	—	—
Sub-Group II. Scurvy	—	—	—	—
Sub-Group II. Alcoholism	2	1	2	1
GROUP "C."				
Debility, &c.	6	—	12	—
GROUP "D."				
Rheumatism	34	—	34	—
Tubercular Diseases	2	1	2	—
Other Diseases	24	—	11	—
II.—LOCAL DISEASES.				
Diseases of the—				
1. Nervous System, Nervous Diseases	2	2	5	—
1. Nervous System, Mental „	2	—	—	—
2. Eye	12	—	11	—
3 & 4. Other Organs of Special Senses	4	—	8	—
5. Circulatory System	—	—	1	1
6. Respiratory „	65	1	182	10
7. Digestive „	106	—	76	—
8. Lymphatic and Glandular System	28	—	34	—
9. Urinary System	2	—	2	1
10. Generative „	131	—	134	—
11. Organs of Locomotion	1	—	7	—
12. Connective Tissue	35	—	40	—
13. Skin	161	—	89	—
III.—POISONS.	—	—	—	—
IV.—INJURIES.				
1. General	3	2	2	2
2. Local	103	1	64	—
3. In Action	—	—	—	—
No appreciable disease	—	—	1	—
Cause unknown (refers to deaths only)	—	—	—	—
General Total	1,435	9	1,401	18

ADMISSIONS into HOSPITAL, and DEATHS among the TROOPS ON BOARD
from one Colony or Station abroad to another, with the Ratio per 1,000 of the

Intercolonial.		Ratio per 1,000 of the Strength.					
9,846 353		Passage Out.		Passage Home.		Intercolonial.	
Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
—	—	—	—	—	—	—	—
—	—	1·5	—	—	—	—	—
4	1	·8	·76	4·8	1·92	11·3	2·83
55	—	9·1	—	38·4	—	155·8	—
—	—	—	—	1·9	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	9·6	—	—	—
23	—	14·4	—	9·6	—	65·2	—
82	1	25·8	·76	64·3	1·92	232·3	2·83
29	—	·8	—	172·7	·96	56·7	—
—	—	1·5	—	1·0	—	—	—
86	—	145·7	—	135·3	—	243·6	—
11	—	41·7	—	73·9	—	31·2	—
154	—	324·7	—	209·2	—	436·2	—
251	—	512·1	—	418·4	—	711·0	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	1·5	·76	1·9	·96	—	—
1	—	4·6	—	11·5	—	2·8	—
8	—	25·8	—	32·6	—	22·7	—
—	—	1·5	·76	1·9	—	—	—
14	—	18·2	—	10·6	—	39·7	—
1	—	1·5	1·52	4·8	—	2·8	—
—	—	1·5	—	—	—	—	—
5	—	9·1	—	10·6	—	14·2	—
3	—	3·0	—	7·7	—	8·5	—
1	—	—	—	1·0	·96	2·8	—
8	—	49·3	·76	174·7	9·60	22·7	—
29	1	80·4	—	72·9	—	82·1	2·83
10	—	21·2	—	32·6	—	28·3	—
—	—	1·5	—	1·9	·96	—	—
84	—	99·4	—	128·6	—	238·0	—
4	—	·8	—	6·7	—	11·3	—
19	—	26·6	—	38·4	—	53·8	—
36	—	122·2	—	85·4	—	102·0	—
—	—	—	—	—	—	—	—
2	—	2·3	1·52	1·9	1·92	5·7	—
19	—	78·1	·76	61·4	—	53·8	—
—	—	—	—	—	—	—	—
—	—	—	—	1·0	—	—	—
—	—	—	—	—	—	—	—
597	2	1088·7	6·84	1344·5	17·27	1691·2	5·66

ABSTRACT No. XXXVIII.—ON THE INFLUENCE OF AGE ON THE MORTALITY.—Table showing the Death Rates of the Warrant Officers, Non-commissioned Officers and Men, at the several Ages, arranged by quinquennial Periods, in the several Foreign Commands.

Commands.	Under 20 Years.				20 and under 25.				25 and under 30.				30 and under 35.				35 and under 40.				40 and upwards.			
			Ratio per 1,000.				Ratio per 1,000.				Ratio per 1,000.				Ratio per 1,000.				Ratio per 1,000.				Ratio per 1,000.	
	Strength.	Died.	1892.	1882–91.	Strength.	Died.	1892.	1882–91.	Strength.	Died.	1892.	1882–91.	Strength.	Died.	1892.	1882–91.	Strength.	Died.	1892.	1882–91.	Strength.	Died.	1892.	1882–91.
Gibraltar	999	3	3·00	4·23	2,340	9	3·85	4·76	1,132	1	·88	5·52	323	—	—	7·93	109	—	—	7·97	33	1	30·30	26·39
Malta	922	5	5·42	6·78	4,040	33	8·17	7·57	2,339	21	8·98	6·87	393	1	2·54	8·44	105	1	9·52	14·17	48	—	—	18·18
Cyprus	66	—	—	4·60	288	2	6·94	10·65	134	—	—	4·07	28	1	35·71	17·20	11	—	—	37·23	4	—	—	—
Egypt	159	4	25·16	13·46*	1,493	20	13·40	25·08*	1,180	15	12·71	17·33*	207	4	19·32	15·85*	48	1	20·83	19·14*	15	—	—	42·60*
Canada	59	—	—	2·79	653	—	—	2·97	562	—	—	4·16	62	—	—	7·56	39	—	—	19·45	17	1	58·82	4·65
Bermuda	76	—	—	6·19	828	4	4·83	8·89	348	3	8·62	9·98	79	3	37·97	10·33	22	—	—	14·55	10	—	—	35·21
West Indies	33	—	—	6·63	516	3	5·81	8·29	506	5	9·88	10·10	103	1	9·71	10·36	35	2	57·14	29·90	8	—	—	46·87
South Africa and St. Helena	204	—	—	7·05	1,528	5	3·27	7·58	1,131	5	4·42	7·24	241	4	16·61	8·30	79	1	12·66	7·14	26	1	38·46	15·00
Mauritius	28	—	—	16·53	258	2	7·75	14·12	220	5	22·72	17·36	43	1	23·26	19·55	8	—	—	17·86	3	—	—	31·25
Ceylon	33	—	—	3·24	740	6	8·11	10·50	409	4	9·78	13·63	53	2	37·74	15·62	22	—	—	14·60	4	—	—	12·05
China	34	—	—	—†	659	5	7·59	7·93†	575	8	13·91	10·82†	79	2	25·32	16·00†	24	—	—	12·81†	11	1	90·91	45·45†
Straits Settlements	79	—	—	2·44†	680	7	10·29	6·21†	337	3	8·90	5·63†	80	1	12·50	5·27†	25	—	—	12·24†	4	—	—	25·00†
India	1,968	16	8·13	8·98	32,384	661	20·41	16·01	24,993	364	14·56	12·69	5,462	67	12·27	13·28	1,653	30	18·15	15·20	432	13	30·09	20·38

* For nine years only (1883 to 1891).

† For seven years only (1885 to 1891).

ABSTRACT No. XXXIX.—TABLE showing the various CORPS which served in the UNITED KINGDOM during the Year 1892, and some of the most important of their HEALTH STATISTICS.

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	HOUSEHOLD CAVALRY.										days.	days.		
1st	Life Guards - - - -	425	258	—	6	9·56	607·0	—	14·12	22·49	8·23	13·56	London, 3 months; Windsor, 7½ months; Shorncliffe, 1½ months. Detachment at Aldershot.	76
2nd	Life Guards - - - -	427	159	—	6	9·34	372·3	—	14·05	21·87	8·00	21·50	Windsor, 3 months; London, 9 months. Detachment at Aldershot.	76
	Royal Horse Guards - - -	405	330	—	6	17·15	814·8	—	14·81	42·34	15·50	19·02	London, 12 months. Detachment at Aldershot.	76
	Household Cavalry detached -	2	—	—	—	·26	—	—	—	—	—	—	—	—
	Total Household Cavalry -	1,259	747	—	18	36·31	593·3	—	14·30	28·84	10·55	17·79		
	CAVALRY.													
1st	Dragoon Guards - - -	326	341	3	2	23·71	1046·0	9·20	6·13	72·73	26·62	25·45	Shorncliffe, 10½ months; Windsor, 1½ months.	—
4th	Dragoon Guards - - -	657	398	3	14	30·20	605·8	4·56	21·31	45·96	16·82	27·77	Aldershot, 12 months - -	10
5th	Dragoon Guards - - -	664	420	2	11	30·85	632·5	3·01	16·56	46·46	17·00	26·88	Aldershot, 12 months - - -	36
6th	Dragoon Guards - - -	362	254	—	11	10·20	701·6	—	30·39	28·18	10·31	14·70	Piershill, 12 months. Detachment at Glasgow.	4
1st	Royal Dragoons - - -	553	270	2	11	14·53	488·2	3·61	19·89	26·27	9·61	19·69	York, 12 months - - - -	36
2nd	Royal Dragoons - - -	672	497	5	5	30·84	739·6	7·44	7·44	45·89	16·79	22·71	Curragh, 8½ months; Dublin, 3½ months.	36
3rd	Hussars - - - -	688	922	2	11	53·05	1340·1	2·90	15·99	77·10	28·22	21·06	Dublin, 9 months; Curragh, 3 months	13

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	CAVALRY—*cont.*										days.	days.		
4th	Hussars	610	597	4	21	38·52	978·7	6·55	34·42	63·14	23·11	23·61	Colchester, 12 months. Detachment at Aldershot.	14
6th	Dragoons	363	445	2	12	23·65	1225·9	5·51	33·06	65·15	23·84	19·45	Brighton, 12 months. Detachment at Aldershot.	2
8th	Hussars	387	442	1	4	16·16	1142·1	2·58	10·34	41·76	15·28	13·38	Norwich, 12 months	3
9th	Lancers	592	395	3	12	21·29	667·2	5·06	20·27	35·96	13·16	19·72	Dundalk and Belfast, 5½ months; Newbridge, 6½ months.	7
10th	Hussars	532	417	1	10	22·79	783·8	1·88	18·79	42·84	15·08	20·00	Dublin, 8½ months; Cahir, 3½ months; Detachments at Limerick, Waterford, and Fethard.	8
12th	Lancers	397	444	1	8	22·88	1118·4	2·52	20·15	57·63	21·09	18·86	Manchester, 6 months; Preston, 6 months. Detachments at Liverpool and Birmingham.	5
13th	Hussars	408	209	2	4	7·52	512·2	4·90	9·80	18·43	6·74	13·17	Ballincollig, 12 months. Detachments at Fermoy, Kinsale, and Limerick.	7
14th	Hussars	401	372	1	6	21·13	927·7	2·49	14·96	52·69	19·28	20·79	Leeds, 7 months; Manchester, 5 months. Detachment at Birmingham.	—
15th	Hussars	594	354	3	4	16·27	596·0	5·05	6·73	27·39	10·02	16·82	Cahir, 5½ months; Curragh, 3 months; Belfast, 3½ months. Detachments at Waterford, Fethard, and Tipperary.	11
17th	Lancers	415	329	1	3	17·89	792·7	2·41	7·23	43·11	15·77	19·90	Hounslow, 12 months	—
20th	Hussars	635	433	4	14	28·27	681·9	6·30	22·04	44·52	16·29	23·89	Aldershot, 12 months	5
	Cavalry Depôt	1,545	1,598	3	22	73·09	1034·3	1·93	14·24	47·31	17·31	16·74	Canterbury, 12 months	Since formation.
	Other Corps	187	77	—	5	15·36	562·0	—	36·49	112·12	41·03	73·01		
	Total Cavalry of the Line	10,938	9,214	43	190	518·20	842·4	3·93	17·37	47·38	16·29	19·34		

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	ROYAL ARTILLERY.										days.	days.		
A Depôt	Horse Artillery - - -	221	208	1	9	17·12	941·1	4·52	40·72	77·47	28·35	30·13	Woolwich, 12 months - - -	Permanent.
B Depôt	Horse Artillery - - -	220	263	2	6	15·98	1186·4	9·10	27·27	72·64	26·59	22·21	Woolwich, 12 months - - -	„
D	Horse Artillery - - -	146	134	1	2	8·20	917·8	6·85	13·70	56·16	20·56	22·40	Aldershot, 12 months - - -	4
E	Horse Artillery - - -	135	104	—	2	4·71	770·3	—	14·81	34·89	12·77	16·57	Newbridge, 9 months; Woolwich, 3 months. Detachment at Glenbeigh Camp.	3
F	Horse Artillery - - -	167	81	—	1	4·13	485·0	—	5·98	24·73	9·05	18·66	Woolwich, 11 months; Okehampton, 1 month.	11
G	Horse Artillery - - -	111	111	—	6	7·72	1000·0	—	54·09	69·55	25·45	25·45	Aldershot, 12 months - - -	3
I	Horse Artillery - - -	149	101	—	2	4·97	678·0	—	13·42	33·36	12·21	18·01	Aldershot, 12 months - - -	10
J	Horse Artillery - - -	153	128	1	1	8·10	835·9	6·53	6·53	52·94	19·38	23·16	Woolwich, 12 months - - -	6
L	Horse Artillery - - -	110	64	—	4	2·86	581·8	—	36·36	26·00	9·51	16·35	Woolwich, 7½ months. Detachment at Okehampton. To India.	9
O	Horse Artillery - - -	105	81	—	4	4·29	771·4	—	38·09	40·85	14·95	19·38	Newbridge, 12 months. Detachment at Glenbeigh Camp.	3
P	Horse Artillery - - -	119	131	2	2	4·47	1100·8	16·80	16·80	37·56	13·74	12·49	Dorchester, 11 months; Okehampton, 1 month.	1
R	Horse Artillery - - -	14	38	1	1	1·02	2714·3	71·43	71·43	72·86	26·66	9·82	Newbridge, 1 month. From India -	—
—	Riding Estalishment - - -	101	67	1	1	5·30	663·4	9·90	9·90	52·47	19·20	28·95	Woolwich, 12 months - - -	Permanent.
1/1 Depôt	Field Artillery - - - -	545	470	5	4	28·05	862·4	9·17	7·34	51·47	18·84	21·80	Woolwich, 12 months - - -	„
2/1 Depôt	Field Artillery - - - -	539	546	5	4	28·82	1013·0	9·28	7·42	53·47	19·57	19·32	Woolwich, 12 months - - -	„
1/2 Depôt	Field Artillery - - - -	432	604	3	10	28·76	1398·4	6·94	23·10	66·57	24·37	17·41	Woolwich, 12 months - - -	„

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	ROYAL ARTILLERY—*cont.*										days.	days.		
2/2 Depôt	Field Artillery - - - -	334	493	3	8	22·36	1476·0	8·98	23·95	66·95	24·50	16·60	Woolwich, 12 months - - -	Permanent.
1st	Field Artillery - - - -	154	134	—	3	10·00	870·1	—	19·48	64·93	23·77	27·31	Aldershot, 12 months - - -	8
3rd	Field Artillery - - - -	200	113	2	2	5·59	565·0	10·00	10·00	27·95	10·23	18·10	Woolwich, 12 months. Aldershot for manœuvres.	7
4th	Field Artillery - - - -	99	118	—	3	6·95	1191·9	—	30·30	70·20	25·69	21·55	Aldershot, 11 months; Okehampton, 1 month.	2
7th	Field Artillery - - - -	96	71	—	2	3·36	739·5	—	20·83	35·08	12·81	17·32	Glasgow, 12 months - - -	4
11th	Field Artillery - - - -	131	156	1	2	8·79	1190·8	7·63	15·26	67·10	24·55	20·62	Sheffield, 12 months - - -	4
12th	Field Artillery - - - -	126	93	2	—	3·99	738·1	15·87	—	31·66	11·59	15·70	Sheffield, 12 months - - -	5
13th	Field Artillery - - - -	144	104	1	2	6·26	722·2	6·94	13·89	43·47	15·91	22·03	Hilsea, 11 months; Okehampton, 1 month.	6
14th	Field Artillery - - - -	173	154	1	6	9·08	890·2	5·78	34·68	52·49	19·21	21·58	Aldershot, 12 months - - -	4
16th	Field Artillery - - - -	149	113	—	2	5·11	758·4	—	13·42	34·29	12·55	16·55	Weedon, 11 months; Okehampton, 1 month.	8
18th	Field Artillery - - - -	138	115	—	—	4·93	833·3	—	—	35·72	13·07	15·69	Coventry, 11 months; Okehampton, 1 month.	5
25th	Field Artillery - - - -	141	127	—	3	7·90	900·7	—	21·28	56·03	20·51	22·77	Ipswich, 12 months - - -	6
28th	Field Artillery - - - -	99	78	1	—	5·19	787·9	10·10	—	52·42	19·19	24·35	Shorncliffe, 12 months - - -	1
29th	Field Artillery - - - -	158	77	—	1	3·86	487·3	—	6·33	24·43	8·94	18·34	Clonmel, 8 months; Curragh, 4 months. Detachment at Glenbeigh Camp.	9
30th	Field Artillery - - - -	130	108	—	1	4·58	777·0	—	7·19	32·95	12·06	15·52	Weedon, 11 months: Okehampton, 1 month.	7
32nd	Field Artillery - - - -	153	81	1	3	6·18	529·4	6·54	19·64	40·39	14·78	27·92	Aldershot, 12 months - - -	11

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	ROYAL ARTILLERY—*cont.*										days.	days.		
37th	Field Artillery - - - -	97	100	1	2	4·61	1030·9	10·30	20·61	47·52	17·39	16·87	Exeter, 11 months; Okehampton, 1 month.	2
38th	Field Artillery - - - -	98	81	—	1	5·00	826·5	—	10·20	51·02	18·67	22·59	Shorncliffe, 12 months - - -	1
40th	Field Artillery - - - -	190	151	1	1	7·66	794·7	5·26	5·26	40·31	14·75	18·56	Woolwich, 12 months. Aldershot for manœuvres.	9
41st	Field Artillery - - - -	172	105	1	—	7·24	610·4	5·81	—	42·09	15·40	25·23	Aldershot, 11 months; Okehampton, 1 month.	8
45th	Field Artillery - - - -	195	204	1	6	11·05	1046·1	5·13	30·77	56·66	20·74	19·82	Woolwich, 12 months. Aldershot for manœuvres.	9
52nd	Field Artillery - - -	130	98	—	2	6·92	753·8	—	15·38	53·23	19·48	25·84	Shorncliffe, 12 months - - -	14
56th	Field Artillery - - - -	131	101	2		6·74	771·0	15·26	15·26	51·45	18·83	24·42	Newcastle, 6¼ months; Exeter, 4¾ months; Morecambe, 1 month.	10
57th	Field Artillery - - - -	138	152	—	2	9·06	1101·4	—	14·49	65·65	24·03	21·81	Aldershot, 5 months; Ipswich, 6 months; Okehampton, 1 month.	6
58th	Field Artillery - - - -	125	112	1	—	7·41	896·0	1·00	—	59·28	21·69	24·21	Exeter, 7 months; Aldershot, 4 months; Okehampton, 1 month.	7
61st	Field Artillery - - - -	94	157	—	2	5·41	1670·2	—	21·27	57·55	21·06	12·61	Christchurch, 11 months; Okehampton, 1 month.	1
62nd	Field Artillery - - - -	145	120	—	3	7·97	827·6	—	20·69	54·96	20·11	24·31	Newcastle, 12 months - - -	5
63rd	Field Artillery - - - -	106	69	2	1	3·86	650·9	18·86	9·43	36·42	13·33	20·47	Colchester, 12 months - - -	4
64th	Field Artillery - - - -	95	52	—	—	2·27	547·3	—	—	23·89	8·74	15·97	Athlone, 12 months. Detachment at Glenbeigh Camp.	4
66th	Field Artillery - - - -	133	149	—	1	9·20	1120·3	—	7·52	69·17	25·31	22·60	Newcastle, 12 months - - -	4
67th	Field Artillery - - - -	148	76	—	2	3·37	513·5	—	13·51	22·77	8·33	16·23	Fermoy, 12 months. Detachment at Glenbeigh Camp.	6
69th	Field Artillery - - - -	147	131	1	—	9·46	891·1	6·80	—	64·35	23·55	26·43	Hilsea, 11 months; Okehampton, 1 month.	6

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	ROYAL ARTILLERY—*cont.*										days.	days.		
73rd	Field Artillery	96	96	—	1	6·08	1000·0	—	10·41	63·33	23·18	23·18	Ipswich, 6 months; Newcastle-on-Tyne, 6 months.	2
74th	Field Artillery	110	54	—	—	1·93	490·9	—	—	17·54	6·42	13·08	Mullingar, 12 months. Detachment at Glenbeigh Camp.	2
75th	Field Artillery	133	90	1	—	3·94	676·7	7·51	—	29·62	10·84	16·02	Trowbridge, 11 months; Okehampton, 1 month.	16
77th	Field Artillery	110	83	—	2	3·62	754·5	—	18·18	32·91	12·04	15·96	Colchester, 12 months	2
78th	Field Artillery	95	57	1	—	3·16	600·0	10·52	—	33·26	12·17	20·29	Athlone, 12 months. Detachment at Glenbeigh Camp.	—
79th	Field Artillery	98	65	—	3	5·14	663·3	—	30·61	52·45	19·20	28·94	Colchester, 12 months	1
80th	Field Artillery	173	120	—	—	6·20	693·6	—	—	35·84	13·11	18·91	Limerick, 9 months; Curragh, 3 months. Detachment at Glenbeigh Camp.	6
10th	Mountain Artillery	192	145	—	—	4·69	755·2	—	—	24·42	8·94	11·83	Newport, 11 months; Hay Camp, 1 month.	5
	Garrison Artillery, Eastern Division	1,826	1,256	6	25	75·27	687·8	3·28	13·69	41·22	15·08	21·93	Various.	—
	Garrison Artillery, Southern Division.	2,471	1,509	13	41	99·10	610·6	5·26	16·59	40·09	14·62	24·03	Various.	—
	Garrison Artillery, Western Division	1,689	1,165	10	23	61·51	689·7	5·92	13·61	36·41	13·33	19·32	Various.	—
	Royal Artillery: District Establishment.	670	196	12	11	13·77	292·5	17·91	16·42	20·55	7·52	25·71	Various.	—
	Royal Artillery: District Staff	761	227	4	4	13·77	208·3	5·25	5·25	18·09	6·62	22·20	Woolwich.	—
	Royal Artillery, School of Gunnery	353	100	2	2	5·81	283·3	5·66	5·66	16·45	6·02	21·26	Shoeburyness.	—
	Royal Artillery, Various	277	136	—	15	19·36	490·9	—	54·15	69·89	25·28	52·10	Various.	—
	Total Royal Artillery	16,899	12,423	93	249	719·21	735·1	5·50	14·73	42·56	15·58	21·19		

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	ROYAL ENGINEERS.										days.	days.		
	Royal Engineers - - -	4,362	2,358	20	38	129·51	540·6	4·58	8·71	29·69	10·87	20·10	Various.	—
	FOOT GUARDS.													
1st	Grenadier Guards - - -	656	590	2	13	48·68	899·4	3·05	19·82	74·21	27·16	30·19	London, 9 months; Windsor, 3 months.	28
2nd	Grenadier Guards - - -	598	828	7	11	57·92	1384·9	11·70	18·39	96·86	35·45	25·60	London, 12 months - - -	1
3rd	Grenadier Guards - - -	679	575	2	13	37·90	846·8	2·95	19·15	55·82	20·43	24·12	Windsor, 9 months; London, 3 months	7
1st	Coldstream Guards - - -	741	857	3	17	51·05	1156·5	4·05	22·94	68·89	25·21	21·80	Dublin, 8 months; London, 3½ months; Aldershot, ½ month.	7
2nd	Coldstream Guards - - -	715	657	3	15	45·94	918·9	4·19	20·98	64·25	23·51	25·59	London, 12 months - - -	10
1st	Scots Guards - - - -	652	580	5	14	42·26	889·5	7·67	21·47	64·81	23·72	26·66	London, 6½ months; Dublin, 4 months; Aldershot, 1½ months.	10
2nd	Scots Guards - - - -	669	698	6	20	50·04	1043·3	8·97	28·40	74·70	27·41	26·24	London, 12 months - - -	7
	Detachments - - - -	614	355	—	3	31·07	578·2	—	4·89	50·60	18·52	32·03	Various.	—
	Total Foot Guards - -	5,324	5,140	28	106	364·86	965·4	5·26	19·91	68·53	25·08	25·98		
	INFANTRY.													
1st	Royal Scots - - - -	608	356	—	7	19·94	585·5	—	11·51	32·79	12·03	20·50	York, 12 months - - - -	1

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	INFANTRY—*cont.*										days.	days.		
2nd	East Kent Regiment - - -	467	609	1	6	31·03	1307·1	2·14	12·85	66·44	24·32	18·63	Chatham, 11¾ months. Athlone, ¼ month. Detachments at Gravesend and Sheerness.	6
1st	Royal Lancaster Regiment - -	643	710	2	16	40·98	1104·2	3·11	24·88	63·73	23·32	21·12	Aldershot, 12 months - - -	11
1st	Northumberland Fusiliers - -	549	531	3	10	30·70	967·2	5·46	18·21	55·92	20·46	21·16	Dover, 10¾ months; Lydd, 1¼ months	12
1st	Royal Warwickshire Regiment -	804	723	1	24	44·34	899·2	1·24	29·85	55·15	20·18	22·45	Aldershot, 12 months - - -	12
2nd	Royal Fusiliers - - -	961	837	5	9	42·64	870·9	5·20	9·36	44·37	16·24	18·64	Woolwich, 12 months. Aldershot for manœuvres.	3
2nd	Liverpool Regiment - - -	75	166	1	—	4·36	221·3	13·33	—	58·13	21·27	9·61	Manchester, 1½ months. Detachments at Fleetwood and Chester. From Aden.	—
2nd	Norfolk Regiment - - -	581	498	—	16	26·89	857·1	—	27·54	46·28	16·94	19·76	Colchester, 12 months - - -	2
1st	Lincolnshire Regiment - -	576	429	1	4	22·19	744·8	1·74	6·94	38·52	14·10	18·95	Aldershot, 12 months - - -	15
1st	Suffolk Regiment - - -	571	554	4	12	31·40	970·2	7·00	21·01	54·90	20·12	20·74	Colchester, 9 months. Detachment at Purfleet. From India.	—
1st	West Yorkshire Regiment - -	506	490	1	5	24·15	968·3	1·97	9·88	47·72	17·47	18·04	Preston, 10¾ months; Aldershot, 1¼ months. Detachments, Chipping, Fleetwood, and Isle of Man.	13
2nd	East Yorkshire Regiment - -	510	479	2	3	23·18	939·2	3·92	5·88	45·45	16·63	17·71	Manchester, 10¾ months; Preston, 1¼ months. Detachments, Chipping, Fleetwood, Lichfield, and Chester.	4
2nd	Bedfordshire Regiment - -	545	491	2	6	27·76	900·9	3·66	11·00	50·93	18·64	20·69	Devonport, 11 months. From India -	—
2nd	Leicestershire Regiment - -	579	1,035	1	7	59·07	1787·6	1·72	12·09	102·02	37·34	20·89	Warley, 11¾ months; Chatham, ¼ month. Detachment at Gravesend.	2
1st	Royal Irish Regiment - -	779	589	2	25	38·95	756·1	2·56	32·09	50·00	18·30	24·20	Curragh, 12 months - - -	7

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	INFANTRY—*cont.*										days.	days.		
1st	Yorkshire Regiment	434	524	3	14	30·07	1207·3	6·91	32·26	69·28	25·36	21·00	Portsmouth. 9 months; Jersey, 3 months. Detachment at Hilsea.	3
1st	Lancashire Fusiliers	750	601	1	17	28·77	801·3	1·33	22·66	38·31	14·04	17·52	Belfast, 12 months	12
1st	Royal Scots Fusiliers	638	444	2	7	17·27	695·9	3·14	10·97	27·07	9·91	14·24	Glasgow, 12 months	11
2nd	Cheshire Regiment	492	618	—	5	30·11	1235·8	—	10·16	61·19	22·39	17·83	Sheffield, 12 months	3
2nd	Royal Welsh Fusiliers	634	485	3	7	26·42	765·0	4·73	11·04	41·67	15·25	19·94	Curragh, 8 months; Aldershot, 4 months.	12
1st	South Wales Borderers	804	745	3	7	45·25	926·6	3·72	8·68	56·28	20·60	22·23	Aldershot, 11½ months. To Egypt	—
1st	King's Own Scottish Borderers	539	585	5	9	49·83	1085·3	9·27	16·69	92·44	33·83	31·17	Devonport, 12 months	1
1st	Scottish Rifles	853	918	7	14	52·44	1076·2	8·20	16·41	61·47	22·50	20·90	Aldershot, 12 months	11
1st	Royal Inniskilling Fusiliers	609	542	3	10	35·75	890·0	4·92	16·42	58·70	21·48	24·14	Portsmouth and Hilsea, 9 months; Dover, 3 months.	3
1st	Gloucestershire Regiment	634	740	6	22	48·85	1167·2	9·44	34·70	77·05	28·20	24·16	Dublin, 12 months	13
2nd	Worcestershire Regiment	614	391	—	6	22·58	636·8	—	9·77	36·78	13·46	21·13	Curragh, 12 months	17
2nd	East Lancashire Regiment	615	439	1	—	24·95	713·8	1·62	—	40·56	14·84	20·80	Mullingar, 12 months	12
2nd	East Surrey Regiment	661	604	1	14	27·70	913·8	1·51	21·18	41·91	15·34	16·79	Tipperary, 12 months. Detachments at Fermoy, Cahir, Templemore, and Roscrea.	7
2nd	Duke of Cornwall's Light Infantry	837	833	—	10	52·18	997·5	—	11·94	62·34	22·81	22·92	Dublin, 12 months	6
1st	West Riding Regiment	530	468	3	7	22·97	883·0	5·66	13·20	43·34	15·86	17·96	Bradford, 12 months. Detachments at Lichfield and Chester.	3

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	INFANTRY—*cont.*										days.	days.		
1st	Border Regiment	479	407	5	8	22·04	849·7	10·44	16·70	46·01	16·84	19·82	Dover, 11 months; Lydd, 1 month	2
1st	Royal Sussex Regiment	589	543	2	12	36·09	921·9	3·39	20·37	61·27	22·42	24·32	Dublin, 12 months	7
2nd	Hampshire Regiment	574	462	3	9	29·32	804·9	5·22	15·68	51·08	18·69	23·23	Portsmouth, Gosport, and Hilsea, 12 months.	4
2nd	South Staffordshire Regiment	759	479	1	9	34·03	631·1	1·31	11·86	44·83	16·41	26·00	Aldershot, 12 months	12
2nd	Dorsetshire Regiment	573	325	2	5	19·77	567·2	3·49	8·72	34·50	12·62	22·26	Plymouth, 12 months	6
1st	South Lancashire Regiment	724	431	—	8	20·85	595·3	—	11·05	28·80	10·54	17·74	Jersey, 8 months; Birr, 4 months	6
1st	Welsh Regiment	120	97	—	—	3·02	808·3	—	—	25·16	9·21	11·39	Detachments, Fort Popton and Newport.	—
2nd	Welsh Regiment	412	552	2	6	29·36	1339·8	4·85	14·56	71·26	26·08	19·46	Devonport, 1½ months; Aldershot, 8 months. To India.	14
2nd	Royal Highlanders	594	374	5	4	22·11	629·6	8·42	6·73	37·22	13·62	21·64	Limerick, 12 months,	11
1st	Oxfordshire Light Infantry	576	560	2	19	37·57	972·2	3·47	32·98	65·22	23·87	24·55	Gosport, 12 months. Aldershot for manœuvres.	5
1st	Essex Regiment	675	279	5	7	13·12	413·3	7·41	10·37	19·44	7·11	17·21	Buttevant, 12 months. Detachments at Ballincollig, Fermoy, Tipperary, and Tralee.	8
1st	Derbyshire Regiment	775	779	—	21	37·12	1005·1	—	27·09	47·90	17·53	17·44	Colchester, 12 months	14
2nd	Loyal North Lancashire Regiment	635	382	4	4	20·36	601·5	6·30	6·30	32·06	11·73	19·50	Enniskillen, 12 months. Detachment at Londonderry.	9
1st	Northamptonshire Regiment	755	677	1	12	32·99	896·7	1·32	15·90	43·69	15·99	17·83	Aldershot, 12 months. To India	12
2nd	Northamptonshire Regiment	9	9	—	—	·15	1000·0	—	—	16·67	6·10	6·10	Colchester, 5 days. From Straits Settlements.	—

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	INFANTRY—*cont.*										days.	days.		
2nd	Royal Berkshire Regiment - -	672	384	1	14	22·07	571·4	1·49	20·83	32·84	12·02	21·03	Cork, 8½ months; Portland, 3½ months. Detachments, Fermoy, Queenstown, and Youghal.	11
2nd	Royal West Kent Regiment -	490	352	—	4	22·76	718·4	—	8·16	46·45	17·00	23·67	Shorncliffe, 12 months - - -	10
1st	Yorkshire Light Infantry - -	686	653	1	12	32·84	949·7	1·46	17·49	47·87	17·52	18·41	Alderney and Guernsey, 12 months -	5
2nd	Shropshire Light Infantry - -	558	352	3	24	23·99	630·8	5·37	43·01	42·99	15·73	24·94	Cork, 12 months. Detachments at Queenstown and Youghal.	11
1st	Middlesex Regiment - - -	509	349	4	5	19·48	685·7	7·86	9·82	38·27	14·01	20·43	Kilkenny, 8½ months. Detachments at Waterford and Duncannon Fort. To Gibraltar.	13
3rd	King's Royal Rifle Corps - -	593	506	—	2	21·26	853·3	—	3·37	35·85	13·12	15·38	Parkhurst, 12 months - - -	1
4th	King's Royal Rifle Corps - -	21	35	—	—	·92	1666·6	—	—	43·80	16·03	9·66	Gosport, 1 month. From Burma -	—
1st	Wiltshire Regiment - - -	610	310	—	5	17·71	—	—	—	—	—	—	Curragh, 12 months - - -	10
1st	Manchester Regiment - -	689	419	8	5	18·08	608·1	11·61	7·25	26·24	9·60	15·79	Kinsale, 12 months. Detachments at Queenstown and Ballincollig.	10
2nd	North Staffordshire Regiment -	488	311	4	3	12·27	637·5	8·20	6·15	25·14	9·20	14·44	Portland, 9 months; Portsmouth, 3 months. Detachments at Hilsea and Gosport.	4
1st	York and Lancaster Regiment -	592	371	4	6	13·75	626·7	6·75	10·12	23·22	8·50	13·56	Birr, 8½ months; Cork, 3½ months. Detachment at Youghal.	8
1st	Durham Light Infantry - -	668	607	3	14	32·42	908·7	4·49	20·98	48·53	17·76	19·55	Aldershot, 12 months - - -	5
1st	Highland Light Infantry - -	708	458	1	13	28·05	646·9	1·41	18·36	39·62	14·50	22·41	Dover, 4 months; Lydd, 2½ months; Aldershot, 5½ months.	12
1st	Seaforth Highlanders - -	695	433	5	11	17·63	623·0	7·20	15·83	25·37	9·28	14·90	Fermoy, 12 months. Detachments at Ballincollig and Cahir.	10

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	INFANTRY—*cont.*										days.	days.		
2nd	Gordon Highlanders -	758	576	1	15	31·25	761·6	1·32	19·79	41·22	15·09	19·85	Curragh, 8½ months; Dublin, 3½ months.	11
1st	Queen's Own Cameron Highlanders	169	88	1	2	3·25	520·7	5·91	11·83	19·23	7·04	13·52	Edinburgh, 2 months. To Malta -	5
1st	Royal Irish Rifles -	583	268	—	1	9·94	459·7	—	1·72	17·05	6·24	13·57	Fermoy, 12 months -	11
2nd	Royal Irish Fusiliers -	636	336	4	2	16·79	528·3	6·29	3·14	26·40	9·66	18·29	Athlone, 6½ months; Curragh, 2 month; Kilkenny, 3½ months. Detachments at Waterford, Clonmel, and Duncannon Fort.	8
1st	Connaught Rangers -	697	474	10	8	26·19	680·0	14·34	11·47	37·57	13·75	20·22	Pembroke Dock, 12 months. Detachment at Newport.	1
1st	Argyll and Sutherland Highlanders	569	367	3	19	20·78	645·0	5·27	33·39	36·52	13·36	20·72	Edinburgh, 10 months. From Hong Kong.	1
2nd	Leinster Regiment -	614	578	2	17	33·76	943·0	3·26	27·69	54·99	20·11	21·64	Aldershot, 12 months -	15
1st	Royal Munster Fusiliers -	699	872	—	9	50·00	1247·5	—	12·87	71·53	26·18	20·87	Dublin, 12 months -	9
1st	Royal Dublin Fusiliers -	605	381	5	6	16·01	629·8	8·26	9·92	26·46	9·69	15·38	Newry, 12 months. Detachments, Dundalk and Newtownards.	6
2nd	Rifle Brigade -	573	532	—	13	29·96	928·4	—	22·69	52·29	19·14	20·61	Belfast, 12 months -	12
4th	Rifle Brigade -	717	628	3	6	33·61	875·8	4·18	8·36	46·87	17·15	19·59	Devonport, 12 months -	2
	Mounted Infantry -	120	60	—	—	3·04	500·0	—	—	25·33	9·27	18·54	Aldershot.	—
	Other Infantry -	1,053	744	—	61	110·97	706·5	—	57·93	105·38	38·57	54·59	Various.	—
	Total Infantry Regiments -	42,419	35,234	159	700	2009·48	830·6	3·72	16·50	47·37	17·34	20·87		

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	REGIMENTAL DEPÔTS.										days.	days.		
Depôt	Royal Scots	154	86	—	2	3·02	558·4	—	12·99	19·61	7·17	12·85	Glencorse	Since formation.
„	Royal West Surrey Regiment	175	182	3	2	5·88	1040·0	17·14	11·43	33·60	12·30	11·82	Guildford	„
„	East Kent Regiment	135	164	—	—	5·75	1214·8	—	—	42·59	15·59	12·83	Canterbury	„
„	Royal Lancaster Regiment	183	84	—	—	2·44	459·0	—	—	13·33	4·88	10·63	Lancaster	„
„	Northumberland Fusiliers	129	117	1	1	5·47	906·9	7·75	7·75	42·40	15·52	17·11	Newcastle-on-Tyne	„
„	Royal Warwickshire Regiment	168	53	1	—	2·09	315·4	5·95	—	12·44	4·55	14·43	Warwick	„
„	Royal Fusiliers	193	91	—	—	3·88	471·5	—	—	20·10	7·36	15·60	Hounslow	„
„	Liverpool Regiment	216	124	—	1	4·62	574·0	—	4·63	21·38	7·82	13·63	Warrington	„
„	Norfolk Regiment	159	98	—	2	3·79	622·6	—	12·58	23·84	8·72	14·15	Norwich	„
„	Lincolnshire Regiment	152	64	1	1	2·29	423·0	6·58	6·58	15·06	5·45	12·94	Lincoln	„
„	Devonshire Regiment	188	119	3	1	7·85	633·0	15·95	5·31	41·75	15·28	24·14	Exeter	„
„	Suffolk Regiment	224	166	2	1	7·02	741·1	8·93	4·46	31·34	11·47	15·48	Bury St. Edmund's	„
„	Somersetshire Light Infantry	150	118	—	3	3·68	786·6	—	20·00	24·53	8·97	11·41	Taunton	„
„	West Yorkshire Regiment	167	55	1	1	1·53	329·3	5·99	5·99	9·16	3·35	10·11	York	„
„	East Yorkshire Regiment	140	68	1	—	3·11	485·7	7·14	—	22·21	8·13	16·74	Beverley	„
„	Bedfordshire Regiment	135	90	—	3	4·99	666·6	—	22·22	36·96	13·53	20·29	Bedford	„

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	REGIMENTAL DEPÔTS—*cont.*										days.	days.		
Depôt	Leicestershire Regiment	174	78	1	2	3·45	448·2	5·75	11·49	19·83	7·25	16·19	Leicester	Since formation.
„	Royal Irish Regiment	180	63	1	—	2·16	350·0	5·56	—	12·00	4·39	12·55	Clonmel	„
„	Yorkshire Regiment	143	39	4	1	3·05	272·7	27·97	6·99	21·33	7·81	28·62	Richmond	„
„	Lancashire Fusiliers	159	59	—	1	2·14	371·0	—	6·28	13·46	4·92	13·27	Bury	„
„	Royal Scots Fusiliers	116	68	1	1	2·37	586·2	8·62	8·62	20·43	7·48	12·75	Ayr	„
„	Cheshire Regiment	123	69	—	4	2·69	560·9	—	32·56	21·87	8·00	14·27	Chester	„
„	Royal Welsh Fusiliers	173	90	—	1	3·80	520·2	—	5·78	21·96	8·04	15·45	Wrexham	„
„	South Wales Borderers	124	87	1	1	3·82	701·6	8·06	8·06	30·80	11·27	16·07	Brecon	„
„	King's Own Scottish Borderers	116	119	1	5	4·50	1025·8	8·62	43·10	38·71	14·19	13·84	Berwick-on-Tweed	„
„	Scottish Rifles	150	69	1	4	2·51	460·0	6·66	26·66	16·73	6·12	13·31	Hamilton	„
„	Royal Inniskilling Fusiliers	178	84	—	—	2·32	471·9	—	—	13·03	4·77	10·11	Omagh	„
„	Gloucestershire Regiment	136	122	2	—	4·98	897·0	14·70	—	36·61	13·40	14·94	Horfield	„
„	Worcestershire Regiment	121	51	—	—	1·63	421·5	—	—	13·47	4·93	11·69	Worcester	„
„	East Lancashire Regiment	148	107	3	2	4·47	722·9	20·27	13·51	30·20	11·05	15·29	Burnley	„
„	East Surrey Regiment	192	70	1	1	2·25	364·6	5·21	5·21	11·72	4·29	11·76	Kingston-on-Thames	„
„	Duke of Cornwall's Light Infantry	149	93	—	2	3·36	624·1	—	13·42	22·55	8·25	13·22	Bodmin	„

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	REGIMENTAL DEPÔTS—*cont.*										days.	days.		
Depôt	West Riding Regiment - -	150	133	—	—	7·22	886·7	—	—	48·13	17·61	19·87	Halifax - - - - -	Since formation.
„	Border Regiment - - -	133	77	1	1	3·42	578·9	7·51	7·51	25·71	9·41	16·25	Carlisle - - - - -	„
„	Royal Sussex Regiment - -	170	115	—	1	3·15	676·5	—	5·88	18·53	6·78	10·03	Chichester - - - -	„
„	Hampshire Regiment - -	201	107	2	3	3·87	532·3	9·95	14·92	19·25	7·04	13·24	Winchester - - - -	„
„	South Staffordshire Regiment -	195	116	—	1	4·44	594·9	—	5·12	22·77	8·33	14·01	Lichfield - - - - -	„
„	Dorsetshire Regiment - -	144	150	1	—	3·84	1041·6	6·94	—	26·66	9·76	9·37	Dorchester - - - -	„
„	South Lancashire Regiment - -	140	54	1	—	1·91	385·7	7·14	—	13·64	4·99	12·94	Warrington - - - -	„
„	Welsh Regiment - - -	150	102	4	4	3·83	680·0	26·66	26·66	25·53	9·34	13·74	Cardiff - - - - -	„
„	Royal Highlanders - -	144	51	—	1	2·47	354·1	—	6·94	17·15	6·28	17·72	Perth - - - - -	„
„	Oxfordshire Light Infantry - -	126	144	—	2	9·01	1142·8	—	15·87	71·43	26·18	22·90	Oxford - - - - -	„
„	Essex Regiment - - -	182	142	—	4	7·08	780·2	—	21·98	38·90	14·24	18·25	Warley - - - - -	„
„	Derbyshire Regiment - -	143	48	2	1	4·47	335·6	13·99	6·99	31·25	11·44	34·09	Derby - - - - -	„
„	North Lancashire Regiment -	119	83	—	2	2·74	697·4	—	16·80	23·02	8·42	12·08	Preston - - - - -	„
„	Northamptonshire Regiment -	147	110	—	—	3·79	748·3	—	—	25·78	9·44	12·61	Northampton - - - -	„
„	Royal Berkshire Regiment - -	138	110	—	3	3·85	797·1	—	21·74	27·89	10·21	12·81	Reading - - - - -	„
„	Royal West Kent Regiment - -	175	172	—	1	6·38	982·8	—	5·71	36·46	13·34	13·57	Maidstone - - - -	„

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	REGIMENTAL DEPÔTS—*cont.*										days.	days.		
Depôt	Yorkshire Light Infantry	138	60	1	3	2·30	434·8	7·24	21·73	16·66	6·10	14·03	Pontefract	Since formation.
„	Shropshire Light Infantry	151	123	1	2	3·88	814·5	6·62	13·24	25·69	9·40	11·54	Shrewsbury	„
„	Middlesex Regiment	194	144	2	—	4·83	742·3	10·31	—	24·89	9·11	12·27	Hounslow	„
„	Wiltshire Regiment	107	61	—	1	2·68	570·1	—	9·34	25·05	9·17	16·08	Devizes	„
„	Manchester Regiment	141	84	3	2	3·37	595·7	21·27	14·18	23·90	8·74	14·68	Ashton-under-Lyne	„
„	North Staffordshire Regiment	211	112	1	1	3·45	530·8	4·74	4·74	16·35	5·98	11·27	Lichfield	„
„	York and Lancaster Regiment	162	72	—	2	2·84	444·4	—	12·34	17·53	6·42	14·44	Pontefract	„
„	Durham Light Infantry	149	93	1	1	4·29	624·1	6·71	6·71	28·79	10·54	16·88	Newcastle-on-Tyne	„
„	Highland Light Infantry	138	53	—	1	2·13	384·1	—	7·25	15·43	5·65	14·71	Hamilton	„
„	Seaforth Highlanders	112	32	—	4	1·02	385·7	—	35·21	9·11	3·33	11·66	Fort George	„
„	Gordon Highlanders	193	77	—	2	2·77	398·9	—	10·36	14·35	5·25	13·16	Aberdeen	„
„	Cameron Highlanders	201	101	3	3	4·28	502·4	14·92	14·92	21·29	7·79	15·51	Inverness	„
„	Royal Irish Rifles	217	215	1	1	7·83	990·8	4·60	4·60	36·08	13·21	13·33	Belfast	„
„	Royal Irish Fusiliers	166	52	1	—	1·31	313·3	6·02	—	7·89	2·89	9·32	Armagh	„
„	Connaught Rangers	112	93	1	—	2·90	830·3	8·93	—	25·89	9·47	11·41	Galway	„
„	Argyll and Sutherland Highlanders	166	144	2	1	6·71	867·4	12·05	6·02	40·42	14·79	17·05	Stirling	„

Battery or Battalion.	Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalided.	Average Constantly Sick.	Ratio per 1,000 of Mean Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year, &c.	Years at Home since last return from Foreign Service.
							Admitted.	Died.	Invalided.	Average Constantly Sick.				
	REGIMENTAL DEPÔTS—*cont.*										days.	days.		
Depôt	Leinster Regiment - - -	176	144	1	—	3·32	818·2	5·68	—	18·86	6·90	8·38	Birr - - - - - -	Since formation.
„	Royal Munster Fusiliers - -	233	131	1	3	5·27	562·2	4·29	12·88	22·62	8·28	14·72	Tralee - - - - -	„
„	Royal Dublin Fusiliers - -	123	106	3	—	4·35	861·2	—	—	35·37	12·94	15·02	Naas - - - - - -	„
„	King's Royal Rifle Corps and Rifle Brigade.	678	761	3	4	25·79	1122·4	4·42	5·90	38·04	13·92	12·40	Winchester - - - -	„
„	Provisional Battalion - -	757	885	—	14	50·22	1169·1	—	18·49	66·34	24·28	20·77	Shorncliffe - - - -	„
„	Detached - - - - -	116	17	—	3	2·55	146·5	—	25·86	21·98	8·04	54·90	Various - - - - - -	„
	Total Regimental Depôts -	12,148	8,221	65	115	336·47	676·7	5·35	9·47	27·70	10·14	14·98		
	Garrison Staff and Departments -	6,953	3,027	40	54	173·85	435·3	5·75	7·77	25·00	9·15	21·02		

ABSTRACT No. XL.—Table, taken from the Reports of the Principal Medical Officers, showing the various Corps which served in the different Foreign Commands during the Year 1892, and some of the most important of their Health Statistics.

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	GIBRALTAR.															
	Royal Artillery.												days.	days.		
3rd	Eastern Division - -	243	105	1	1	2	1	7·00	432·0	8·23	4·11	28·80	10·54	24·40	Gibraltar, 12 months - - -	6
6th	Eastern Division - -	248	155	—	—	—	4	13·01	625·0	—	16·12	52·45	19·20	30·72	Gibraltar, 12 months - - -	7
12th	Eastern Division - -	250	173	1	—	1	7	13·83	692·0	4·00	28·00	55·32	20·24	29·25	Gibraltar, 12 months - - -	6
19th	Eastern Division - -	250	109	—	—	—	2	7·31	436·0	—	8·00	29·24	10·70	24·54	Gibraltar, 12 months - - -	6
	District Staff, &c. - -	59	13	—	—	—	2	·76	220·3	—	33·89	12·88	4·71	21·39	Gibraltar, 12 months - - -	Various
	Total - - -	1,050	555	2	1	3	16	41·91	528·6	2·86	15·24	39·91	14·61	27·64		
	Royal Engineers - -	363	120	1	—	1	6	7·97	330·5	2·75	16·52	21·95	8·63	24·30	Gibraltar, 12 months - - -	—
	Infantry Regiments.															
1st	Somersetshire Light Infantry	790	795	4	—	4	11	51·16	1006·3	5·06	13·92	64·75	23·70	23·55	Gibraltar, 12 months - - -	1
2nd	South Lancashire Regiment -	627	415	1	—	1	5	25·85	661·8	1·59	7·97	41·22	15·08	22·79	Gibraltar, 9 months. To Malta, 26th September.	3
1st	Royal Highlanders - -	872	503	4	—	4	8	32·81	576·8	4·58	9·17	37·62	13·77	23·87	Gibraltar, 12 months - - -	3

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	GIBRALTAR—*cont.*															
	Infantry Regiments—cont.												days.	days.		
1	Middlesex Regiment - -	145	118	1	—	1	—	10·62	813·7	6·89	—	73·24	26·80	32·94	Gibraltar, 3 months. From England, 25th September.	—
2nd	King's Royal Rifle Corps -	907	777	—	1	1	13	52·36	856·6	1·10	14·33	57·72	21·12	24·66	Gibraltar, 12 months - - -	1
	Total - - -	3,341	2,608	10	1	11	37	172·80	780·6	3·29	11·07	51·72	18·93	24·25		
	Garrison Staff and Departments.															
	Army Service Corps - -	56	37	1	—	1	2	2·10	660·7	17·85	35·71	37·50	13·72	20·77	Various - - - - - -	Various
	Medical Staff Corps - -	74	30	—	—	—	1	1·95	405·4	—	13·51	26·35	9·64	23·79	" - - - - - -	"
	Ordnance Store Corps - -	38	11	—	—	—	—	1·20	289·4	—	—	31·57	11·55	39·92	" - - - - - -	"
	Staff, &c. - - - -	14	3	—	—	—	—	·11	214·2	—	—	7·85	2·87	13·42	" - - - - - -	"
	Total - - -	182	81	1	—	1	3	5·36	445·0	5·49	16·48	29·45	10·78	24·22		
	Grand total -	4,936	3,364	14	2	16	62	228·04	681·5	3·24	12·56	46·19	16·91	24·81		
	MALTA.															
	Royal Artillery.															
2nd	Southern Division - -	261	226	5	1	6	11	16·86	865·5	22·9	42·14	64·60	23·64	27·30	Ricasoli, 9 months; Fort Tigne and Hutments, 3 months.	1
6th	Southern Division - -	281	157	1	1	2	5	9·43	558·7	7·12	17·79	33·56	12·28	21·98	Upper St. Elmo and St. James' Cavalier, 9 months; Ricasoli, 3 months.	5
12th	Southern Division - -	230	160	—	—	—	6	11·91	687·0	—	26·08	51·77	18·95	27·24	Ricasoli, 9 months; Upper St. Elmo and St. James' Cavalier, 3 months.	5

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	Malta—*cont.*															
	Royal Artillery—cont.												days.	days.		
27th	Southern Division	239	123	2	—	2	5	11·31	514·6	8·37	20·92	47·32	17·32	33·65	Fort Tigne and Hutments, 9 months. Ricasoli, 3 months.	3
29th	Southern Division	290	113	1	—	1	2	7·77	389·6	3·45	6·90	26·80	9·80	25·17	Fort Tigne and Hutments, 12 months	1
	Staff, &c.	65	6	—	—	—	1	·88	92·3	—	15·38	13·54	4·95	53·68	St. James' Cavalier, 12 months	Various
	Total	1,366	785	9	2	11	30	58·16	574·7	8·05	21·96	42·58	15·58	27·12		
	Royal Engineers	239	128	2	—	2	1	8·42	535·6	8·37	4·18	35·23	12·89	24·08	St. Francis' Barracks, Floriana, 12 months.	"
	Infantry Regiments.															
2nd	Royal Scots	188	140	1	—	1	11	9·97	744·7	5·32	58·49	53·03	19·41	26·06	Isola Gate District, 3 months. To India, 7th March.	1
1st	Royal West Surrey Regiment	788	904	8	1	9	23	55·04	1147·2	11·42	29·19	69·85	25·56	22·28	Verdala District Barracks, 12 months. Detachment at Gozo, 1 month. From England, 2nd January.	1
2nd	South Lancashire Regiment	240	189	1	—	1	1	8·83	787·5	4·16	4·16	36·79	13·46	19·09	Isola Gate District, 3 months. From and Gibraltar, 30th September.	—
1st	Welsh Regiment	870	783	4	1	5	24	45·08	900·0	5·75	27·59	51·82	18·96	21·07	Floriana and Nôtre Dame Barracks, 12 months. Detachments at Citta Vecchia and Marsamuscetta, 7 months.	3
2nd	Essex Regiment	364	175	6	—	6	3	10·58	480·8	16·48	8·24	29·06	10·63	22·13	Fort Chambray, Gozo, 9 months. To India, 28th September.	5
1st	Royal Berkshire Regiment	1,004	549	10	1	11	9	37·17	546·8	10·96	8·97	37·02	13·55	24·78	Lower St. Elmo, 12 months. Detachments at Fort Musta and Fort St. Angelo.	5
1st	Royal West Kent Regiment	47	16	1	—	1	2	3·24	340·4	21·28	42·55	68·93	25·23	74·12	Manoel Fort and Hutments. To India, 4th January.	2

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	Malta—*cont.*															
	Infantry Regiments—cont.												days.	days.		
1st	Cameron Highlanders - -	695	609	6	—	6	7	28·50	876·3	8·63	10·07	41·00	15·01	17·13	Pembroke Camp, 9 months. Detachment at Citta Vecchia, 3 months. From England, 7th March.	—
2nd	Royal Irish Rifles - -	1,050	777	8	1	9	30	63·72	740·0	8·57	28·57	60·68	22·21	30·02	Pembroke Camp and Detachment at St. Angelo, 3 months. Isola District, 6 months. Manoel Fort and Hutments, 3 months. Detachment at Marsamuscetta.	1
2nd	Connaught Rangers - -	826	534	4	—	4	25	37·21	646·5	4·84	30·26	45·05	16·48	25·50	Manoel Fort and Hutments, and Detachment at Fort Salvatore, 9 months. Half battalion to Gozo, head-quarters and four companies to Cyprus, 27th September.	3
	Other Corps - - -	5	1	—	—	—	—	·02	200·0	—	—	4·00	1·46	7·32	Various - - - - -	Various
	Total - -	6,077	4,677	49	4	53	135	299·36	769·6	8·72	22·21	49·26	18·03	23·43		
	Garrison Staff and Departments.															
Det.	Medical Staff Corps - -	101	86	1	—	1	12	5·06	852·5	9·90	118·81	50·09	18·33	21·53	Various station hospitals - -	„
	Other Staff and Departmental Corps.	64	10	—	1	1	3	·84	156·2	15·62	46·87	13·13	4·80	30·74	Various - - - - -	„
	Total - - -	165	96	1	1	2	15	5·90	581·8	12·12	90·91	35·76	13·09	22·49		
	Grand Total -	7,847	5,686	61	7	68	181	371·84	724·6	8·67	23·06	47·38	17·34	23·93		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	CYPRUS.												days.	days.		
	Royal Engineers	3	—	—	—	—	—	—	—	—	—	—	—	—	Limassol, 8 months; Troodos, 4 months.	Various
	Infantry Regiments.															
2nd	Essex Regiment	361	286	2	1	3	24	15·76	792·2	8·31	66·48	43·65	15·97	20·16	Polymedia and Nicosia, 5 months; Troodos, 4 months. To India, 8th October.	7
2nd	Connaught Rangers	127	81	—	—	—	—	4·48	637·8	—	—	35·27	12·89	20·21	Polymedia and Nicosia, 3 months. From Malta, 2nd October.	3
	Total	488	367	2	1	3	24	20·24	752·0	6·15	49·18	41·47	15·15	20·15		
	Garrison Staff and Departments.	40	13	1	—	1	3	·75	325·0	25·00	75·00	18·75	6·86	21·11	Limassol, Polymedia, and Nicosia, 8 months; Troodos, 4 months.	Various
	Grand Total	531	380	3	1	4	27	20·99	715·6	7·53	50·84	39·53	14·46	20·22		
	CANADA.															
	Royal Artillery.															
3rd	Western Division	318	190	—	—	—	5	8·87	597·5	—	15·72	27·89	10·20	17·07	Halifax, 12 months	2
Det. 17th	Western Division	24	9	—	—	—	1	·58	375·0	—	41·66	24·16	8·84	23·58	Halifax, 3months. To England, 2nd April.	2
	Total	342	199	—	—	—	6	9·45	581·9	—	17·54	27·63	10·11	17·38		
	Royal Engineers.															
18th	Company	92	32	—	—	—	1	1·43	347·8	—	10·87	15·54	5·68	16·36	Halifax, 12 months	5
40th	Company	61	28	—	—	—	—	·71	459·0	—	—	11·64	4·26	9·28	Halifax, 12 months	4
	Total	153	60	—	—	—	1	2·14	392·1	—	6·53	13·98	5·12	13·05		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	CANADA—*cont.*															
	Infantry Regiments.												days.	days.		
1st	Leicestershire Regiment	844	364	—	1	1	3	13·62	431·3	1·18	3·55	16·14	5·91	13·69	Halifax, 12 months.	—
2nd	West Riding Regiment	1	1	—	—	—	—	·01	1000·0	—	—	10·00	3·66	3·66	Halifax, 8 days, arrived from Bermuda *en route* to England.	
	Total	845	365	—	1	1	3	13·63	431·9	1·18	3·55	16·13	5·90	13·67		
	Garrison Staff and Departments.	52	7	1	—	1	—	·29	134·6	19·23	—	5·58	2·04	15·16	Halifax	Various
	Grand Total	1,392	631	1	1	2	10	25·51	453·3	1·44	7·18	18·32	6·71	14·80		
	BERMUDA.															
	Royal Artillery.															
1	Western Division	263	182	4	1	5	2	7·27	692·0	19·01	7·60	27·64	10·12	14·61	St. George's, 12 months. Detachments at Prospect and Ireland Island.	2
	Royal Engineers.															
27th	Company	66	34	—	—	—	2	1·85	515·2	—	30·30	28·03	10·25	19·91	St. George's, 12 months. Detachment at Ireland Island.	4
36th	Company	100	38	1	1	2	—	2·72	380·0	20·00	—	27·20	9·96	26·20	Prospect, 12 months. Detachment at Boaz Island.	8
	Total	166	72	1	1	2	2	4·57	433·1	12·05	12·05	27·53	10·08	23·23		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	Bermuda—*cont.* *Infantry Regiment.*												days.	days.		
1st	(King's) Liverpool Regiment	858	414	5	—	5	10	22·10	482·5	5·83	11·66	25·76	9·43	19·54	Prospect, 12 months. Detachments at St. George's and Ireland Island.	1
	Garrison Staff and Departments.															
	Army Service Corps	10	2	—	—	—	—	·04	200·0	—	—	4·00	1·46	7·32	Various stations	Various
	Medical Staff Corps	26	3	—	—	—	—	·05	115·4	—	—	1·92	·70	6·10	"	"
	Ordnance Store Corps	34	15	—	—	—	1	·72	441·1	—	29·41	21·20	7·75	17·57	"	"
	Garrison Staff	6	—	—	—	—	—	—	—	—	—	—	—	—	"	"
	Total	76	20	—	—	—	1	·81	263·2	—	13·16	10·66	3·90	14·82		
	Grand Total	1,363	688	10	2	12	15	34·75	504·8	8·80	11·00	25·49	9·33	18·49		
	West Indies. **(Barbados, &c.)** *Royal Artillery.*															
3rd	Western Division	29	35	1	—	1	2	2·93	1206·9	34·48	68·97	101·33	36·97	30·63	St. Lucia, 2 months. To Halifax, N.S., 10th March.	6
18th	Western Division	84	145	2	—	2	3	9·82	1726·2	23·81	35·71	11·69	42·78	24·78	St. Lucia, 10 months. From England, 29th February.	—
	District Staff, &c.	16	28	—	—	—	—	1·21	1750·0	—	—	75·62	27·67	15·81	Various	—
	St. Lucia Company	2	—	—	—	—	—	—	—	—	—	—	—	—		
	Total	131	208	3	—	3	5	13·96	1587·8	22·90	38·17	106·56	39·00	24·56		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	West Indies—*cont.*															
	(**Barbados, &c.**)—*cont.*															
	Royal Engineers.												days.	days.		
	Royal Engineers	10	6	—	1	1	1	·24	600·0	100·00	100·00	24·00	8·78	14·64	St. Lucia and Barbados, 12 months	Various.
	West India Fortress Co.	8	3	—	—	—	—	·05	375·0	—	—	6·25	2·29	·61	St. Lucia and Barbados, 12 months	"
	Total	18	9	—	1	1	1	·29	500·0	55·55	55·55	16·12	5·89	11·78		
	Infantry Regiments.															
2nd	West Riding Regiment	538	729	—	—	—	23	50·42	1352·2	—	42·75	93·72	34·30	25·31	Barbados, 12 months. Detachment at St Lucia.	1
	West India Regiment	5	4	—	—	—	—	·13	800·0	—	—	26·00	9·51	11·87	St. Lucia and Barbados, 12 months	Various.
	Total	543	733	—	—	—	23	50·55	1349·9	—	42·36	93·09	34·07	25·24		
	Garrison Staff and Departments.	25	7	—	—	—	—	·25	280·0	—	—	10·00	3·66	1·31	St. Lucia and Barbados, 12 months	"
	Total, Barbados, &c.	717	957	3	1	4	29	65·05	1334·7	5·58	40·45	90·72	33·20	24·68		
	(**Jamaica.**)															
	Royal Artillery.															
10th	Western Division	107	79	6	—	6	—	4·89	738·3	56·08	—	45·70	16·27	22·66	Newcastle, 12 months. Detachments at Up Park Camp and Port Royal.	2
	District Staff	2	—	—	—	—	—	—	—	—	—	—	—	—		Various.
	Total	109	79	6	—	6	—	4·89	724·8	55·05	—	44·86	16·42	22·65		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	WEST INDIES—*cont.*															
	(JAMAICA)—*cont.*															
	Royal Engineers.												days.	days.		
	Submarine Mining Company -	22	7	—	—	—	—	·83	318·2	—	—	37·73	13·81	43·39	Port Royal, 12 months - - -	Various.
	Supernumerary Staff - -	12	6	—	—	—	—	·35	500·0	—	—	29·16	10·67	21·35	Various - - - - - -	„
	Total - -	34	13	—	—	—	—	1·88	382·3	—	—	34·71	12·68	33·22		
	Infantry Regiments.															
2nd	West Riding Regiment -	301	179	1	—	1	8	13·23	594·7	3·32	25·58	43·95	16·08	27·05	Newcastle 12 months. Detachment at Up Park Camp.	1
2nd	South Staffordshire Regiment	—	1	—	—	—	—	·06	—	—	—	—	—	—		—
	West India Regiment - -	8	13	—	—	—	1	·46	1,625·0	—	125·00	57·50	21·04	12·95	Up Park Camp 12 months - -	—
	Total - -	309	193	1	—	1	9	13·75	624·6	3·23	29·12	44·49	16·29	26·07		
	Depot, West India Regiment	6	—	—	—	—	—	—	—	—	—	—	—	—	- - - - - -	4
	Garrison Staff and Departments.	26	14	1	—	1	—	·79	538·5	38·46	—	30·38	11·12	20·65	Various - - - - -	Various.
	Total, Jamaica - -	484	299	8	—	8	9	20·61	617·8	16·53	18·59	42·58	15·59	25·23		
	Grand Total, West Indies -	1,201	1,256	11	1	12	38	85·66	1,045·8	10·00	31·64	71·32	26·10	24·96		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	South Africa and St. Helena.															
	Cavalry.												days.	days.		
3rd	Dragoon Guards	132	370	—	—	—	—	13·31	2,803·9	—	—	100·83	36·90	13·17	Pietermaritzburg, 2 months. From India, 19th October.	—
11th	Hussars	393	420	3	—	3	34	28·08	1,068·7	7·63	86·51	71·45	26·15	24·47	Pietermaritzburg, 10 months. To India, 23rd October.	2
	Total	525	790	3	—	3	34	41·39	1,504·8	5·71	64·76	78·84	28·85	19.18		
	Royal Artillery.															
4th	Mountain Battery	168	222	—	1	1	7	14·84	1,321·4	5·95	41·67	88·33	32·33	24·47	Pietermaritzburg, 12 months	8
8th	Southern Division	173	176	—	—	—	4	11·98	1,017·3	—	23·12	69·25	25·34	24·91	Cape Town, 12 months	5
	St. Helena Detachment	66	64	1	—	1	4	3·00	969·7	15·15	60·61	45·45	16·64	17·16	St. Helena, 12 months	3
	District Establishment, R.A.	40	6	—	—	—	—	·30	150·0	—	—	7·50	2·74	18·30	Cape Town and Simonstown, 12 months.	—
	Total	447	468	1	1	2	15	30·12	1,047·0	4·47	33·56	67·38	24·66	23·56		
	Royal Engineers.															
29th	Company	100	61	2	—	2	1	3·34	610·0	20·00	10·00	33·40	12·22	20·04	Cape Town, 12 months. Detachments at various stations.	6
	Infantry Regiments.															
1st	East Yorkshire Regiment	778	508	4	—	4	21	32·45	653·0	5·14	26·99	41·71	15·27	23·38	Wynberg, 12 months. Detachments at Simonstown, 12 months; St. Helena, 6 months; Cape Town 5 months.	4

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	SOUTH AFRICA AND ST. HELENA—*cont.*															
	Infantry Regiments—cont.												days.	days.		
Det. 1st	North Staffordshire Regiment	413	441	1	—	1	18	28·88	1,067·8	2·42	43·58	69·93	25·59	23·97	Cape Town, 12 months . .	2
2nd	York and Lancaster Regiment	786	789	2	1	3	13	41·24	1,003·8	3·81	16·54	52·47	19·20	19·13	Pietermaritzburg, 12 months. Detachments at Eshowe, 12 months; St. Helena, 6 months.	1
	Total . .	1,977	1,738	7	1	8	52	102·57	879·1	4·04	26·30	51·88	18·99	21·60		
	Garrison Staff and Departments.															
	Army Service Corps . .	30	10	—	—	—	—	·43	333·3	—	—	14·33	5·25	15·74	Various stations . . .	Various
	Medical Staff Corps . .	42	7	—	—	—	—	·10	166·7	—	—	2·38	·87	5·23	„ . . .	„
	Ordnance Store Corps . .	69	32	2	—	2	1	1·44	463·8	28·99	14·49	20·87	7·64	16·47	„ . . .	„
	Garrison Staff . . .	19	5	1	—	1	—	·20	263·2	52·63	—	10·53	3·85	14·64	„ . . .	„
	Total . . .	160	54	3	—	3	1	2·17	337·5	18·75	6·25	13·56	4·96	14·71		
	Grand Total .	3,209	3,111	16	2	18	103	179·59	969·5	5·61	32·10	55·96	20·48	21·13		
	MAURITIUS.															
	Royal Artillery.															
23rd	Eastern Division . .	110	156	2	1	3	12	6·72	1418·2	27·27	109·09	61·09	22·36	15·77	Port Louis and Curepipe, 12 months	1
	Asiatic Artillery . .	2	—	1	—	1	—	—	—	500·00	—	—	—	—	. . . .	1
	Total . . .	112	156	3	1	4	12	6·72	1392·8	35·71	107·14	60·00	21·96	15·77		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	Mauritius—*cont.*												days.	days.		
	Royal Engineers	25	35	—	1	1	2	1·05	1400·0	40·00	80·00	42·00	15·37	10·98	Port Louis and Curepipe, 12 months	Various
	Infantry Regiment.															
1st	North Staffordshire Regiment	401	397	4	—	4	13	16·83	990·0	9·98	32·42	41·97	15·36	15·51	Port Louis and Curepipe, 12 months	2
	Garrison Staff and Departments.	22	9	1	—	1	1	·34	409·1	45·45	45·45	15·45	5·65	13·83	Port Louis and Curepipe, 12 months	Various
	Grand Total	560	597	8	2	10	28	24·94	1066·0	17·86	50·00	44·53	16·30	15·29		
	Ceylon.															
	Royal Artillery.															
4th	Southern Division	7	13	1	—	1	—	·62	1857·1	142·86	—	88·57	32·42	17·46	Trincomali and Colombo, 1 month. To England, 10th February.	6
16th	Southern Division	192	193	3	—	3	3	8·00	1005·2	15·62	15·62	41·67	15·21	15·13	Half Battery, Colombo, 12 months; Half Battery, Trincomali, 11 months.	6
	District Establishment, R.A.	28	16	—	—	—	1	·96	571·4	—	35·71	34·29	12·55	21·96	Colombo and Trincomali, 12 months	Various
	Total	227	222	4	—	4	4	9·58	978·0	17·62	17·62	42·20	15·45	15·79		
	Royal Engineers	75	48	—	—	—	—	1·78	640·0	—	—	23·73	8·69	13·57	Colombo and Trincomali, 12 months	„
	Infantry Regiments.															
2nd	Royal Warwickshire Regiment.	897	1014	6	—	6	3	47·99	1130·4	6·69	3·34	53·50	19·58	17·32	Colombo, 12 months. Detachments at Kandy and Trincomali. From Bengal, 4th January.	1

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	Ceylon—*cont.*															
	Infantry Regiments—cont.												days.	days.		
1st	Gordon Highlanders - -	25	28	2	—	2	4	5·06	1120·0	80·00	160·00	202·40	74·08	66·14	Colombo, 4 days. Embarked for Bengal. Detachment at Colombo until 10th February.	3
	Total - - -	922	1042	8	—	8	7	53·05	1130·1	8·68	7·60	57·54	21·06	18·63		
	Garrison Staff and Departments.	37	8	—	—	—	—	·24	216·2	—	—	6·49	2·37	10·98	Various stations - - -	Various
	Grand Total -	1,261	1,320	12	—	12	11	64·65	1046·8	9·51	8·72	51·27	18·76	17·93		
	China.															
	Royal Artillery.															
25th	Southern Division - -	202	364	1	1	2	8	15·55	1802·0	9·90	39·60	76·98	27·68	15·64	Hong Kong, 12 months - -	1
	District Establishment, R.A. -	30	14	—	—	—	—	·94	466·6	—	—	31·33	11·47	24·57	Hong Kong, 12 months - -	1
	Total - - -	232	378	1	1	2	8	16·49	1629·3	8·62	34·48	71·08	25·99	15·97		
	Royal Engineers -	156	67	2	—	2	1	3·36	429·5	12·82	6·41	21·54	7·88	18·36	Hong Kong, 12 months - -	Various
	Infantry Regiments.															
1st	Shropshire Light Infantry -	894	1,242	11	—	11	2	60·17	1389·3	12·30	2·24	67·30	24·63	17·75	Hong Kong, 11 months. From Egypt, 8th January.	—
1st	Argyll and Sutherland Highlanders.	65	69	—	—	—	1	2·69	1061·5	—	15·38	41·38	15·15	14·27	Hong Kong, 1 month. To England, 23th January.	—
	Total - - -	959	1,311	11	—	11	3	62·86	1367·0	11·49	3·13	65·55	23·99	17·55		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
													days.	days.		
	CHINA—*cont.*															
	Garrison Staff and Departments.	35	7	2	—	2	—	·35	200·0	57·14	—	10·00	3·66	18·30	Hong Kong, 12 months - -	Various
	Grand total -	1,382	1,763	16	1	17	12	83·06	1275·7	12·30	8·68	60·10	22·00	17·24		
	STRAITS SETTLEMENTS.															
	Royal Artillery.															
26th	Southern Division - -	211	200	2	1	3	11	15·85	947·9	14·22	52·13	75·12	27·49	29·01	Fort Canning, 12 months - -	2
	Royal Engineers -	73	58	—	—	—	—	3·51	794·5	—	—	48·08	17·60	22·15	Pulo Brani and Tanglin, 12 months -	Various
	Infantry.															
2nd	Northamptonshire Regiment	779	805	6	1	7	13	51·21	1033·4	8·98	16·68	65·74	24·06	23·28	Tanglin, 11½ months. Detachment at Penang. To England, 14th November.	3
2nd	Lincolnshire Regiment -	107	137	3	—	3	—	6·91	1280·4	28·03	—	64·58	23·63	18·46	Tanglin, ½ month. Detachment at Penang. From India, 11th November.	—
	Total - - -	886	942	9	1	10	13	58·12	1063·2	11·29	14·67	65·60	24·01	22·58		
	Garrison Staff and Departments.	35	9	—	—	—	—	·31	257·1	—	—	8·86	3·24	12·60	Various - - - -	Various
	Grand total -	1,205	1,209	11	2	13	24	77·79	1003·3	10·79	19·92	64·55	23·63	23·55		

Battery, Company, or Battn	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	EGYPT.															
	Cavalry.												days.	days.		
1st	Dragoon Guards	143	115	—	—	—	2	7·12	804·2	—	14·0	49·80	18·22	22·66	Abbassiyeh, 12 months	1
	Royal Artillery.															
10th	Eastern Division	124	81	—	—	—	2	4·75	653·2	—	16·13	38·31	14·02	21·46	Cairo, 12 months. Detachment at Alexandria.	7
	Royal Engineers.															
24th	Company	88	77	1	—	1	3	4·18	875·0	11·36	34·09	47·50	17·38	19·87	Cairo, 12 months. Detachment at Alexandria.	8
	Infantry Regiments.															
1st	Devonshire Regiment	789	1,015	24	—	24	24	79·62	1286·4	30·42	30·42	100·91	36·93	28·71	Alexandria, 12 months. To India, 28th December.	1
1st	South Wales Borderers	3	13	—	—	—	—	·14	4333·3	—	—	46·67	17·08	3·94	Cairo, 3 days. From England, 29th December.	—
1st	South Staffordshire Regiment	763	887	7	—	7	12	49·80	1162·5	9·17	15·73	65·27	23·89	20·55	Cairo, 12 months	1
1st	Dorsetshire Regiment	808	645	9	—	9	25	45·24	798·3	11·14	30·94	55·99	20·49	25·67	Cairo, 12 months	3
2nd	Essex Regiment	1	—	—	—	—	—	·03	—	—	--	30·00	10·98	—	Details proceeding to other Commands.	—
1st	Shropshire Light Infantry	2	8	—	—	—	3	1·38	4000·0	—	1500·00	690·00	252·54	63·15		
	Mounted Infantry	122	192	—	—	—	—	10·54	1573·8	—	—	86·39	31·62	20·09	Abbassiyeh, 12 months	Various
	Total Infantry	2,488	2,760	40	—	40	64	186·75	1109·3	16·08	25·72	75·06	27·47	24·76		

Battery, Company, or Battn.	Corps and Commands.	Average Annual Strength.	Admitted into Hospital.	Deaths.			Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in Command.
				In the Command.	Of Invalids.	Total.			Admitted.	Died.	Invalided.	Constantly Sick.				
	EGYPT—cont.															
	Garrison Staff and Departments.												days.	days.		
	Army Service Corps - -	51	37	—	—	—	—	1·91	725·5	—	—	37·45	13·71	18·89	Detachments at Cairo and Alexandria, 12 months.	Various
	Medical Staff Corps - -	80	45	2	—	2	2	2·45	562·5	25·00	25·00	30·62	11·21	19·93		
	Ordnance Store Corps - -	51	20	—	—	—	—	1·16	392·2	—	—	22·75	8·32	21·23		
	Military Police - - -	64	25	1	—	1	1	1·64	390·6	15·62	15·62	25·62	9·38	24·01		
	Garrison Staff, &c. - -	13	2	—	—	—	—	·48	153·8	—	—	36·92	13·51	87·84		
	Total - - -	259	129	3	—	3	3	7·64	498·1	11·58	11·58	29·50	10·80	21·68		
	Grand Total -	3,102	3,162	44	—	44	74	210·44	1019·3	14·18	23·86	67·84	24·83	24·36		

ABSTRACT No. XLI.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS, MORTALITY, and INVALIDING in each CORPS serving in the BENGAL COMMAND during the Year 1892.

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
CAVALRY.										days.	days.		yrs.	mo.
2nd (King's) Dragoon Guards	525	1,015	16	12	53·71	1933·3	30·48	22·86	102·30	37·44	19·37	Sialkot, 12 months - - - - - -	7	0
3rd " " -	425	492	8	3	25·98	1157·6	18·82	7·06	61·13	22·37	19·33	Rawal Pindi, 9 months (left for Natal on 27th September 1892).	7	11
7th " " -	595	792	9	—	36·79	1331·1	15·13	—	61·83	22·63	17·00	Meerut, $\frac{1}{5}$ month; Muttra, 11 months; marching, $\frac{4}{5}$ month.	8	11
5th Lancers - - -	596	1,085	14	23	50·88	1820·5	23·49	38·59	85·37	31·25	17·16	Meerut, 12 months - - - - - -	4	0
11th Hussars - - -	77	80	—	—	4·32	1039·0	—	—	56·10	20·53	19·76	Rawal Pindi, 1 month (arrived from South Africa on 28th November 1892).	0	1
16th Lancers - - -	590	912	5	25	57·66	1545·8	8·47	42·37	97·73	35·77	23·14	Lucknow, 11 months; marching, 1 month - -	2	3
18th Hussars - - -	574	851	13	6	49·80	1482·6	22·65	10·45	86·76	31·75	21·42	Umballa, 11¾ months; marching, ¼ month - -	3	0½
Total - - -	3,382	5,227	65	69	279·14	1545·5	19·22	20·40	82·54	30·21	19·55			
ROYAL ARTILLERY.														
A Battery, R.H.A. - -	152	191	—	2	8·67	1256·6	—	13·16	57·04	20·88	16·61	Meerut and Practice Camp, 12 months - -	3	2
B " " - -	150	283	4	5	15·13	1886·7	26·67	33·33	100·87	36·92	19·57	Rawal Pindi, 11 months; Campbellpore, ½ month; marching ½ month.	3	2
C " " - -	143	267	1	7	14·77	1867·1	6·99	48·95	103·29	37·80	20·25	Umballa 9⅗ months; marching 2⅖ months -	3	2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
ROYAL ARTILLERY—*cont.*										days.	days.		yrs.	mo.
H Battery, R.H.A.	142	247	1	4	11·27	1739·4	7·04	28·17	79·37	29·05	16·70	Sialkot, 11⅓ months; marching, ⅔ month	3	2
K " "	140	255	4	4	15·95	1821·4	28·57	28·57	113·93	41·70	22·89	Lucknow, 11 months; marching 1 month	1	2
Q " "	142	188	3	3	9·38	1323·9	21·13	21·13	66·06	24·18	18·26	Umballa, 10 months; marching, 2 months	12	0
T " "	147	230	3	*12	12·11	1564·6	20·41	81·63	82·38	30·15	19·27	Meerut and Practice Camp, 10¾ months; marching, 1¼ months.	14	1½
2nd Field Battery, R.A.	148	171	1	—	9·39	1155·4	6·76	—	63·45	23·22	20·10	Lucknow, 11 months; marching, 1 month	11	11¾
6th " "	141	231	—	1	11·58	1638·3	—	7·09	82·13	30·06	18·35	Saugor, 12 months	1	2
8th " "	177	369	6	1	14·54	2084·7	33·90	5·65	82·15	30·07	14·42	Mian Mir, 1 month; Ferozepore, 10¾ months; marching, ¼ month.	11	11¾
9th " "	149	228	3	1	13·54	1530·2	20·13	6·71	90·87	33·26	21·74	Lucknow, ⅔ month; Agra, 10⅔ months; marching, ⅔ month.	9	2
10th " "	148	347	4	3	16·53	2344·6	27·03	20·27	111·69	40·88	17·44	Mooltan, 12 months	8	2
15th " "	154	290	5	1	13·13	1883·1	32·47	6·49	85·26	31·21	16·57	Peshawar, 10 months; Campbellpore, 1¾ months; Rawal Pindi, 2 days; and marching, 8 days.	5	0
22nd " "	150	192	5	7	12·29	1280·0	33·33	46·67	81·93	29·99	23·43	Bareilly and Practice Camp, 9 months; marching, 3 months (left for Nasirabad on 31st December 1892).	6	0
24th " "	144	297	3	3	13·34	2062·5	20·83	20·83	92·64	33·91	16·44	Jhansi, 11⅔ months; marching, ⅓ month	2	2
31st " "	139	223	8	2	11·14	1604·3	57·55	14·39	80·14	29·33	18·28	Cawnpore, 10½ months; marching, 1½ months	4	2
34th " "	149	217	1	5	16·18	1456·4	6·71	33·56	108·59	39·74	27·29	Allahabad and Practice Camp, 12 months	2	2
39th " "	147	350	10	4	13·67	2381·0	68·03	27·21	92·99	34·04	14·29	Mian Mir and Practice and Cholera Camps, 12 months.	11	11¾

* Including eight men invalided at Rawal Pindi.

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
ROYAL ARTILLERY—*cont.*										days.	days.		yrs.	mo.
43rd Field Battery, R.A.	154	250	—	5	12·46	1623·4	—	32·47	80·91	29·61	18·24	Barrackpore, 10¾ months; marching, 1¼ months	12	0
44th " "	150	213	—	7	15·70	1420·0	—	46·67	104·67	38·31	26·98	Jubbulpore, 11½ months; marching, ½ month	12	0
46th " "	141	199	3	5	11·59	1411·3	21·28	35·46	82·20	30·08	21·32	Lucknow, 1 month; Fyzabad, 10½ months; marching, ½ month.	2	2
48th " "	17	26	—	—	·26	1529·4	—	—	15·29	5·60	3·66	Bareilly, 2 days; marching, 1½ months (arrived from Bombay on 13th November 1892).	5	2
50th " "	141	302	4	1	11·28	2141·8	28·37	7·09	80·00	29·28	13·67	Rawal Pindi, 1 month; Campbellpore, 9½ months; Peshawar, 1 month; marching, ½ month.	6	0
51st " "	130	257	3	9	16·29	1976·9	23·08	69·23	125·31	45·86	23·20	Dinapore, 9¾ months; marching, 2¼ months	2	2
54th " "	148	352	1	4	15·05	2378·4	6·76	27·03	101·69	37·22	15·65	Nowgong, 11¾ months; marching, ¼ month	2	2
60th " "	142	232	6	5	12·16	1633·8	42·25	35·21	85·63	31·34	19·18	Rawal Pindi, 11 months; Campbellpore, ¾ month; marching, ¼ month.	6	0
65th " "	145	457	4	5	18·01	3151·7	27·59	34·48	124·21	45·46	14·42	Mian Mir and Practice Camp, 12 months; Dett. at Dalhousie, 12 months.	12	0
68th " "	139	202	1	2	11·06	1453·2	7·19	14·39	79·57	29·12	20·04	Mian Mir and Practice Camp, 2 months; Jullundur, 9¾ months; marching, ¼ month.	11	11½
70th " "	147	254	2	3	12·05	1727·9	13·61	20·41	81·97	30·00	17·36	Meerut, 10¼ months; marching, 1¾ months	6	1½
71st " "	147	211	—	1	9·76	1435·4	—	6·80	66·39	24·30	16·93	Meerut and Practice Camp, 10½ months; marching, 1½ months.	5	0
No. 1 Mountain Battery, R.A.	97	121	1	5	7·11	1247·4	10·31	51·55	73·30	26·83	21·51	Rawal Pindi, 1 month; Jutogh, 7¾ months; Umballa, 1¼ months; marching, 2 months.	9	2
" 2 " "	94	114	1	7	7·00	1212·8	10·64	74·47	74·47	27·26	22·47	Umballa, 3¾ months; Jutogh, 7½ months; marching, ¾ month.	6	11
" 3 " "	91	124	2	3	7·04	1362·6	21·98	32·97	77·36	28·31	20·78	Rawal Pindi, 6 months; Khyra Gali, 4½ months; marching, 1 month (Derband Field, ½ month).	14	1
" 5 " "	96	102	1	—	5·72	1062·5	10·42	—	59·58	21·81	20·52	Quetta, 12 months	14	1

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
Royal Artillery—*cont.*										days.	days.		yrs.	mo.
No. 6 Mountain Battery, R.A. -	102	122	—	—	7·45	1196·1	—	—	73·33	26·84	22·44	Darjeeling, 12 months - - - - -	7	2
„ 8 „ „	84	96	1	6	4·76	1142·9	11·90	71·43	56·67	20·74	18·15	Umballa, 1⅙ months; Rawal Pindi, 3⅚ months; Bara Gali, 4½ months; marching, 2 months (Derband Field, ½ month).	5	2
„ 9 „ „	89	136	1	1	7·31	1528·1	11·24	11·24	82·13	30·06	19·67	Rawal Pindi, 6⅓ months; Kalabagh, 4½ months; marching, ⅔ month (Derband, ½ month).	8	2
1st Battery, Eastern Div., R.A.	116	221	10	—	10·19	1905·2	86·21	—	87·84	32·15	16·88	Ferozepore, 12 months; Dett. at Amritsar, 12 months.	4	0⅓
8th „ „ „	96	145	—	—	7·65	1510·4	—	—	79·69	29·17	19·31	Fort Allahabad, 11½ months; marching, ½ month	5	2
13th „ „ „	130	253	3	2	12·74	1946·2	23·08	15·38	98·00	35·87	18·43	Rawal Pindi, 8⅔ months; Thobba, 3 months; marching, ⅓ month; Dett. at Fort Attock, 12 months.	6	1⅓
15th „ „ „	94	147	4	5	7·90	1563·8	42·55	53·19	84·04	30·76	19·67	Delhi, 1⅓ months; Roorkee and Practice Camp, 10⅔ months.	11	2
23rd „ „ „	93	166	3	1	8·81	1784·9	32·26	10·75	94·73	34·67	19·42	Jhansi and Practice Camp, 12 months - -	8	2
5th Battery, Southern Div., R.A.	62	115	2	—	5·77	1854·8	32·26	—	93·06	34·06	18·36	Rawal Pindi, 6 months; Camp Thobba, 2⅔ months; marching, ⅓ month (arrived from Mandalay on 5th April 1892).	5	2
7th „ „ -	89	101	—		7·09	1134·8	—	22·47	79·66	29·16	25·69	Roorkee and Practice Camp, 12 months - -	7	1⅓
11th „ „ -	15	22	—	—	·80	1466·7	—	—	53·33	19·52	13·31	Delhi, 1⅓ months (arrived from Bombay on 14th November, 1892).	3	1⅓
20th „ „ -	90	158	4	4	7·38	1755·6	44·44	44·44	82·00	30·01	17·10	Barrackpore, 10 months (left for Bombay 3rd November 1892); Dett. at Fort Chingrikhal, 2⅓ months.	13	0
21st „ „ -	108	124	—	3	9·03	1148·1	—	27·78	83·61	30·60	26·65	Calcutta and Fort Fulta, 12 months - -	3	1⅓
22nd „ „ -	91	135	—	—	4·38	1483·5	—	—	48·13	17·62	11·82	Rawal Pindi, 1⅓ months; Campbellpore, 10⅓ months; marching, ⅓ month.	5	2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
Royal Artillery—*cont.*										days.	days.		yrs.	mo.
24th Battery, Southern Div., R.A.	105	176	1	4	9·97	1676·2	9·52	38·10	94·95	34·75	20·73	Agra, 11½ months; marching, ½ month	9	2
5th Battery, Western Div., R.A.	25	55	—	—	2·12	2200·0	—	—	84·80	31·04	14·11	Barrackpore and Fort Chingrikhal, 2 months (arrived from England on 3rd November 1892).	0	2
6th „ „	75	165	2	1	7·03	2200·0	26·67	13·33	93·73	34·31	15·59	Roorkee, 1½ months; Delhi, 8 months (left for Aden on 12th October 1892).	13	3
12th „ „	99	80	3	—	5·90	808·1	30·30	—	59·60	21·81	26·99	Roorkee and Practice Camp, 12 months	13	0
16th „ „	98	151	—	4	7·92	1540·8	—	40·82	80·82	29·58	19·20	Quetta and Depôt Sibi, 12 months	5	2
20th „ „	92	152	—	—	6·92	1652·2	—	—	75·22	27·53	16·66	Quetta, 12 months	7	2¼
Total	6,394	10,712	125	160	546·30	1675·3	19·55	25·02	85·44	31·27	18·67			
H. Coy. Royal Engineers	37	10	—	—	·53	270·3	—	—	14·32	5·24	19·40	Roorkee and Practice Camp, 12 months; Wing at Calcutta, 12 months; Dett. at Allahabad, 12 months.	25	0
Infantry.														
2nd R.W. Surrey Regiment	971	1,726	13	16	86·88	1777·5	13·39	16·48	89·47	32·75	18·42	Dinapore, 12 months; Dett. at Gnathong, 12 months.	14	10
1st East Kent Regiment	960	1,184	6	34	92·89	1233·3	6·25	35·42	96·76	35·41	28·71	Calcutta, 12 months (the regiment left Calcutta, on 28th December 1892 for Jullundur by rail); Detts. at Dum Dum, 7 months; at Darjeeling, 12 months.	5	9
2nd Northumberland Fusiliers	1,003	2,028	16	12	78·30	2021·9	15·95	11·96	78·07	28·57	14·13	Nowshera, 10½ months; Peshawar, 1½ months; Detts. at Fort Attock, 9 months; Cherat, 7 months.	12	11
1st Royal Fusiliers	926	1,692	12	25	71·99	1827·2	12·96	27·00	77·74	28·45	15·57	Quetta and Depôt Sibi, 12 months	4	11⅓

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
INFANTRY—*cont.*										days.	days.		yrs.	mo.
Dett. 1st Devonshire Regt.	4	45	—	--	2·46	11250·0	—	—	615·00	225·09	20·01	Rawal Pindi, 4 days (arrived from Egypt on 27th December 1892).	—	
2nd Lincolnshire Regiment	716	1,068	8	15	60·22	1491·6	11·17	20·95	84·11	30·78	20·64	Bareilly, 2¼ months; Chaubattia, 6½ months; marching, ¼ month (left for Singapore on 30th September 1892); Wing at Shahjahanpur.	10	8
1st Suffolk Regiment	80	61	—	5	3·89	762·5	—	62·50	48·62	17·80	23·34	Jhansi, 1⅔ months (left for England on 20th February 1892); Dett. at Nowgong, 1⅔ months.	15	4
2nd West Yorkshire Regiment	937	1,376	20	17	83·62	1468·5	21·34	18·14	89·24	32·66	22·24	Lucknow, 2 months; Sitapur, 9⅚ months; marching, ⅙ month; Wing at Benares, 10½ months; Detts. at Sitapur, 2 months; Ranikhet, 9 months.	14	2
1st Bedfordshire Regiment	1,008	1,205	22	11	62·01	1195·4	21·83	10·91	61·52	22·52	18·83	Rawal Pindi, 5⅓ months; Kuldana, 5 months; marching, 1 month (Derband Field, ⅔ months).	2	0
2nd Royal Irish Regiment	806	1,050	17	41	94·63	1302·7	21·09	50·87	117·41	42·97	32·99	Lucknow, 12 months; Detts. at Fatehgarh, 2¾ months; Ranikhet, 7 months.	7	11
2nd Royal Scots Fusiliers	892	1,986	26	14	90·13	2226·5	29·15	15·70	101·04	36·98	16·61	Peshawar, 10¾ months; Sialkot, 1¼ months; Detts. at Amritsar, 1 month; Cherat, 6½ months.	10	11
1st Royal Welsh Fusiliers	989	1,872	62	9	90·18	1892·8	62·69	9·10	91·18	33·37	17·63	Peshawar, 10⅔ months; Nowshera, 1⅓ months; Wing at Cherat, 7 months.	12	3½
2nd South Wales Borderers	624	940	8	27	65·19	1506·4	12·82	43·27	104·47	38·24	25·38	Allahabad, 9⅓ months (left for Aden on 12th October 1892); Dett. at Fort Allahabad, 9⅓ months.	12	4
2nd King's Own Scottish Borderers.	980	1,997	30	13	81·55	2037·8	30·61	13·27	83·21	30·46	14·95	Mian Mir and Practice Camp, 12 months; Detts. at Fort Lahore, and Cholera Camp, 12 months; at Dalhousie, 12 months.	12	11½
1nd Scottish Rifles	936	1,448	15	14	87·19	1547·0	16·03	14·96	93·15	31·09	22·04	Jubbulpore, 12 months; Detts. at Saugor, 12 months; Pachmarhi, 12 months.	13	1½
1st East Lancashire Regiment	934	1,532	20	36	118·41	1640·3	21·41	38·54	126·78	46·40	28·29	Lucknow, 12 months; Wing at Benares, 1⅓ months.	12	0
1st East Surrey „	964	1,835	14	70	97·67	1903·5	14·52	72·61	101·32	57·08	19·48	Calcutta, 1 month; Dum Dum, 10¾ months; marching, ¼ month; Detts. at Barrackpore, 11½ months; Darjeeling, 12 months; Agra, 1 month.	7	11½

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
INFANTRY—*cont.*										days.	days.		yrs.	mo.
2nd Border Regiment -	948	1,875	18	10	101·72	1977·8	18·99	10·55	107·30	39·27	19·86	Mian Mir, ⅔ month; Multan, 11 months; marching ⅓ month; Dett. at Dalhousie, 12 months.	2	10
2nd Royal Sussex Regiment -	951	1,780	32	17	74·25	1871·7	33·65	17·88	78·08	28·58	15·27	Mian Mir, ½ month; Ferozepore, 9½ months; Dum Dum, ¼ month; marching, 1¾ months; Dett. at Ferozepore, 2½ months; Dalhousie, 12 months.	7	0
1st Hampshire " -	889	1,078	24	34	83·64	1212·6	27·00	38·25	94·08	34·43	28·40	Bareilly, 12 months; Detts. at Moradabad, 9 months; Ranikhet, 9 months; Naini Tal, 12 months.	6	11
2nd Oxfordshire Light Infantry	54	62	—	—	2·38	1148·1	—	—	44·07	16·13	14·05	Bareilly, ⅔ month; marching, 5 days (arrived from Toungoo on 6th December 1892).	6	9
2nd Essex Regiment -	133	195	2	—	9·74	1466·2	15·04	—	73·23	26 80	18·28	Shahjahanpur, 1 month and 26 days; Bareilly, 2 days; marching, 3 days (arrived from Cyprus on 1st November 1892).	0	2
2nd Derbyshire " -	952	1,146	13	16	76·39	1203·8	13·66	16·81	80·24	29·37	24·40	Umballa, 10⅓ months; marching, 1⅔ months; Wing at Solon, 6⅓ months; Dett. at Dagshai, 9⅔ months.	10	2
1st Royal West Kent Regt. -	893	776	16	2	40·12	869·0	17·92	2·24	44·93	16·44	18·92	Meerut, 1⅓ months Chakrata, 7⅓ months; Roorkee and Practice Camp, 1⅚ months; marching, ⅚ month (arrived from Malta on 27th January 1892).	0	11
2nd Middlesex Regiment -	808	1,169	9	11	61·54	1446·8	11·14	13·61	76·16	27·88	19·27	Quetta, 10 months and 4 days (arrived from Mhow on 26th February 1892).	12	4
1st King's Royal Rifle Corps -	882	1,270	11	13	64·12	1439·9	12·47	14·74	72·70	26·61	18·48	Rawal Pindi, 5⅔ months; Camp Ghora Dhaka, 5 months; marching, ⅓ month (Derband Field, ½ month); Dett. at Rawal Pindi, 5 months.	2	0
2nd Wiltshire Regiment -	944	1,978	21	35	98·21	2095·3	22·25	37·08	104·04	38·08	18·17	Jhansi, 11⅔ months; marching, ⅓ month; Dett. at Nowgong, 11 months; Sipri, 11 months.	10	11
2nd Manchester Regiment -	1,016	2,463	12	17	111·74	2424·2	11·81	16·73	109·98	40·25	16·60	Sialkot, 10⅔ months; Meerut, 1⅓ months; Detts. at Amritsar, 11 months; Murree, 9 months.	10	2
2nd Durham Light Infantry -	135	102	—	8	5·02	755·6	—	59·26	37·19	13·61	18·01	Quetta and Depôt Sibi, 1½ months (left for Mhow on 17th February 1892).	5	11

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.					
INFANTRY—*cont.*										days.	days.		yrs.	mo.
2nd Highland Light Infantry	948	1,295	12	27	77·53	1366·0	12·66	28·48	81·78	29·93	21·91	Lucknow, 1¼ months; Fyzabad, 10¼ months; marching, ½ month; Dett. at Chakrata, 6½ months.	8	2
2nd Seaforth Highlanders	984	881	10	5	52·29	895·3	10·16	5·08	53·14	19·45	21·72	Rawal Pindi, 6 months; Camp Gharial, 2 months; Camp Thobba, 3 months; marching, 1 month.	13	9
1st Gordon Highlanders	746	763	12	6	51·61	1022·8	16·09	8·04	69·18	25·32	24·77	Umballa, 3½ months; Sabathu, 7½ months; marching, ¼ month (arrived from Ceylon on 23rd January 1892); Dett. at Jutogh, 9 months.	0	11¼
1st Royal Irish Fusiliers	982	2,240	18	9	93·59	2281·1	18·33	9·16	95·31	34·88	15·29	Meerut, 9¼ months; Allahabad, 2¾ months; Detts. at Delhi, 12 months; Chakrata, 6½ months.	9	2
2nd Argyll and Sutherland Highlanders.	956	1,025	14	1	71·50	1072·2	14·64	1·05	74·79	27·37	25·53	Umballa, 4½ months; Dagshai, 7¼ months; marching, ¼ month; Dett. at Dagshai, 2 months (arrived from England on 2nd January 1892).	1	0
1st Leinster Regiment	926	1,789	20	31	102·73	1932·0	21·60	33·48	110·94	40·60	21·02	Agra, 11 months 4 days (left for Deesa on 5th December 1892).	15	1¼
2nd Royal Munster Fusiliers	1,031	1,831	23	18	101·03	1775·9	22·31	17·46	97·99	35·87	20·19	Lucknow, 1 month; Cawnpore, 10¾ months; marching, ¼ month; Dett. at Fatehgarh, 9 months.	8	9
1st Bn. Rifle Brigade	907	1,174	12	21	75·66	1294·4	13·23	23·15	83·42	30·53	23·59	Bareilly and Practice Camp, 3¼ months; Ranikhet, 6 months and 7 days; Calcutta, 5 days; marching, 2 months and 3 days.	12	3¼
3rd " "	925	1,108	16	15	63·11	1197·8	17·30	16·22	68·23	24·97	20·84	Mian Mir, ¼ month; Jullundur, 8½ months; Rawal Pindi, 1 month; Peshawar, 2¼ months marching, ¼ month; Dett. at Bhagsu, 6½ months.	3	10
Total	30,740	49,045	584	655	2685·13	1595·5	19·00	21·31	87·35	31·97	20·04			
Garrison Staff and Departments.	1,527	1,541	42	69	145·42	1009·2	27·50	45·19	95·23	34·86	34·54	Various station hospitals.		
Men of various Corps, marching.	81	42	12	—	1·29	518·5	148·15	—	15·93	5·83	11·24	Various station hospitals.		
Grand Total	42,161	66,577	828	953	3657·81	1579·1	19·64	22·60	86·76	31·75	20·11			

ABSTRACT No. XLII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS, MORTALITY, and INVALIDING in each CORPS serving in the MADRAS COMMAND during the Year 1892.

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength. Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.	Average Sick Time to each Soildier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.		Years of Service in India.	
										days.	days.		months.	yrs.	mo.
CAVALRY.															
19th Hussars	551	808	6	10	69·72	1466·4	10·88	18·14	126·53	46·31	31·58	Bangalore	12	1	3
21st „	539	740	5	28	36·56	1372·9	9·27	51·94	67·82	24·83	18·08	Secunderabad, 2; Bangalore, 10	12	5	0
Details	14	26	2	2	2·84	1857·1	142·85	142·85	202·85	74·24	39·98				
Total	1,104	1,574	13	40	109·12	1425·7	11·77	36·23	98·84	36·18	25·37				
ROYAL ARTILLERY.															
M. By., Royal Horse Artillery	144	142	2	6	12·95	986·1	13·88	41·66	89·93	32·91	33·38	Secunderabad	12	6	11
S. „ „ „	155	151	2	3	15·96	974·2	12·90	19·35	102·96	37·69	38·68	Bangalore	12	7	0
5th Field By., Royal Artillery	140	206	2	5	11·34	1382·5	13·42	33·55	75·90	27·86	20·15	St. Thomas' Mount	12	9	0
19th „ „	152	141	—	—	8·23	927·6	—	—	54·14	19·82	21·36	Bangalore	12	13	0
21st „ „	167	152	1	7	10·58	910·2	5·98	41·91	63·35	23·19	25·48	Bellary	12	7	0
23rd „ „	156	185	—	—	15·34	1185·9	—	—	98·33	35·99	30·35	Bangalore	12	1	2
33rd „ „	143	204	—	—	14·20	1426·6	—	—	99·30	36·34	25·48	Secunderabad	12	1	2
42nd „ „	142	208	—	3	11·92	1464·8	—	21·12	83·94	30·72	20·97	St. Thomas' Mount	12	6	0

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.		Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.						
Royal Artillery—*cont.*										days.	days.		months.	yrs.	mo.
49th Field By., Royal Artillery	146	181	4	—	12·49	1239·7	27·39	—	85·54	31·31	25·26	Secunderabad - - - - -	12	1	2
76th „ „ -	155	148	1	5	11·01	954·8	6·45	32·25	71·03	25·99	27·23	Belgaum - - - - - -	12	13	0
7th Mountain Battery, R.A. -	82	174	2	—	10·67	2121·9	24·39	—	130·12	47·62	22·44	Mandalay - - - - - -	12	6	0
No. 4 By., Eastern Div., R.A. -	83	138	2	9	9·53	1662·6	24·09	108·43	114·81	42·01	25·27	Thayetmyo, 10; Rangoon, 2 - - -	12	4	0
No. 22 „ „ „ -	74	49	1	3	4·84	662·2	13·51	40·54	65·40	23·94	36·15	Secunderabad; left 8th November 1892 -	10	11	0
No. 5 „ Southern „ -	18	33	—	1	3·30	1833·3	—	55·55	183·33	67·10	36·60	Rangoon; left on 18th March 1892 - -	2	5	0
No. 9 „ „ „ -	113	120	3	9	7·78	1061·9	26·54	79·64	68·84	25·20	23·73	Fort St. George - - - - -	12	5	0
No. 18 „ „ „ -	99	151	2	1	9·87	1525·2	20·20	10·10	99·69	36·49	23·92	Rangoon - - - - - -	12	3	0
No. 13 „ Western „ -	11	8	1	—	0·33	727·3	90·90	—	30·00	10·98	15·09	Secunderabad; arrived 13th November 1892	2	13	2
Details Royal Artillery -	31	30	—	2	2·40	967·7	—	64·51	77·41	28·33	29·28				
Total - -	2,020	2,421	23	54	172·74	1198·5	11·38	26·73	85·51	31·30	26·11				
Royal Engineers.															
H. Company, Royal Engineers	33	22	—	1	0·99	666·7	—	30·30	30·00	10·98	16·47	Bangalore - - - - - -	12	17	2

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.		Years of Service in India.	
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.						
Infantry Regiments.										days.	days.		months.	yrs.	mo.
1st Bn. Norfolk Regiment	876	1,080	6	37	85·71	1232·9	6·85	42·24	97·84	35·81	29·05	Rangoon (Dett. at Port Blair)	12	3	10
2nd Bn. Devonshire Regiment	726	977	8	41	54·78	1345·7	11·02	56·47	75·45	27·61	20·52	Shwebo (Dett. at Bhamo and Bernardmyo)	12	15	0
2nd Bn. Suffolk Regiment	953	1,052	19	6	71·89	1103·9	19·94	6·30	75·44	27·60	25·01	Secunderabad	12	1	10
2nd Bn. Somersetshire L. I.	888	947	11	37	68·85	1066·4	12·39	41·67	77·53	28·38	26·61	Fort St. George and Wing at Bellary (Dett. at Palaveram)	12	14	9
2nd Bn. Yorkshire Regiment	838	1,047	6	40	72·98	1249·4	7·16	47·73	87·09	31·87	25·51	Shwebo, 1; Bangalore, 11	12	3	0
2nd Bn. Royal Scots Fusilers	718	503	6	1	33·21	700·6	8·36	1·39	46·25	16·93	24·16	Wellington (Detts. at Cannanore, Calicut, and Malapuram); arrived 31st March 1892	10	0	10
1st Bn. Cheshire Regiment	946	799	6	22	58·13	844·6	6·33	23·26	61·45	22·49	26·63	Belgaum; arrived 19th January 1892	11	5	2
2nd Bn. Royal Inniskilling Fus.	903	1,236	4	10	70·33	1368·8	4·42	11·07	77·88	28·51	20·83	Thayetmyo, 3; Secunderabad, 9	12	3	11
1st Bn. Duke of Corn. L. I.	713	1,077	14	11	63·07	1510·5	19·63	15·42	88·45	32·38	21·43	Fort Dufferin	12	4	10
2nd Bn. Welsh Regiment	171	220	—	—	10·38	1286·5	—	—	60·70	22·22	17·27	Secunderabad; arrived 15th October 1892	3	0	3
2nd Bn. Oxfordshire L. I.	706	1,230	9	33	64·03	1742·2	12·74	46·74	90·70	33·19	19·05	Toungoo; left 30th November 1892	11	6	9
1st Bn. Northamptonshire Regiment.	96	150	—	—	4·98	1562·5	—	—	51·88	18·99	12·15	Bangalore; arrived 19th April 1892	1	0	1
4th Bn. King's Royal Rifle Corps.	517	893	23	26	50·99	1727·3	44·48	50·28	98·62	36·10	20·90	Thayetmyo; left 25th October 1892	10	17	0
Details Infantry Regiments	185	135	—	8	24·20	729·7	—	43·24	130·81	47·88	65·61				
Total	9,236	11,346	112	272	733·53	1228·4	12·12	29·44	79·42	29·07	23·66				

Corps.	Average Annual Strength.	Admitted into Hospital.	Deaths in the Command.	Invalided.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Years of Service in India.
						Admissions into Hospital.	Deaths.	Invalids.	Constantly Sick.				
CONVALESCENT DEPÔTS.										days.	days.		
Poonamallee - - -	107	211	3	33	24·97	1972·0	28·04	308·41	233·36	85·41	43·31		
Wellington - - -	435	542	6	34	44·65	1246·0	13·79	78·16	102·64	37·57	30·15		
Total - -	542	753	9	67	69·62	1389·3	16·60	123·61	128·45	47·01	33·84		
Garrison Staff and Departments.	247	125	2	3	12·41	506·1	8·09	12·15	50·24	18·39	36·34		
Grand Total - -	13,182	16,241	159	437	1098·41	1232·0	12·06	33·15	83·33	30·50	24·75		

ABSTRACT No. XLIII.—TABLE, taken from the REPORT of the PRINCIPAL MEDICAL OFFICER, showing the ADMISSIONS, MORTALITY, and INVALIDING in each CORPS serving in the BOMBAY COMMAND during the Year 1892.

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.	Constantly Sick.				
CAVALRY.										days.	days.		
7th Hussars	583	735	3	18	52·55	1260·7	5·15	30·87	90·14	32·99	26·17	Mhow, 12 months	6
ROYAL ARTILLERY.													
L. Royal Horse Artillery	32	55	—	—	2·13	1718·7	—	—	66·56	24·36	14·17	Kirkee, 2 months (arrived from England, 23rd October).	3/12
N. " "	139	194	1	6	10·42	1395·7	7·19	43·16	74·96	27·44	19·66	Mhow, 12 months	7
R. " "	124	88	1	2	4·95	709·7	8·06	16·13	39·92	14·61	20·59	Kirkee, 10 months (left for England, 39th October)	15
17th Field Battery, R.A.	144	331	1	3	14·42	2298·6	6·94	20·83	101·14	36·65	15·94	Neemuch, 12 months	9
20th " "	129	238	1	—	9·53	1844·9	7·75	—	73·87	27·04	14·65	Kamptee, 12 months	14
22nd " "	1	2	—	—	·68	2000·0	—	—	680·00	248·44	124·44	Nasirabad	—
26th " "	141	142	—	2	9·39	1007·1	—	14·18	66·59	24·38	24·20	Kirkee, 2 months; Ahmednagar, 10 months	9
27th " "	141	170	3	2	8·32	1205·7	21·28	14·18	59·01	21·60	17·91	Kirkee, 12 months	5
35th " "	138	400	2	4	19·66	2898·6	14·49	28·98	142·46	52·14	17·99	Ahmedabad, 12 months	4
36th " "	147	174	7	—	10·05	1183·7	47·62	—	68·37	25·02	21·14	Kirkee, 12 months	5
47th " "	159	310	2	2	12·41	1949·7	12·58	12·58	78·05	28·57	14·65	Karachi, 12 months	1
48th " "	114	192	2	3	6·60	1684·2	17·54	26·31	57·89	21·19	12·58	Nasirabad, 10 months (left for Bareilly, 28th October).	5

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.	Constantly Sick.				
Royal Artillery—*cont.*										days.	days.		
53rd Field Battery, R.A.	161	354	4	2	12·19	2198·9	24·84	12·42	75·71	27·71	12·60	Hyderabad, 12 months	6
54th " "	123	256	4	1	9·34	2081·3	32·52	8·13	75·93	27·79	13·35	Deesa, 10 months	4
59th " "	143	306	2	3	12·35	2139·8	13·99	20·98	86·36	31·61	14·77	Neemuch, 12 months	8
72nd " "	133	123	2	2	5·60	924·8	15·04	15·04	42·10	15·41	16·66	Kirkee, 12 months	4
3rd Southern Division, R.A.	113	108	1	2	6·46	955·7	8·85	17·70	57·17	20·92	21·89	Karachi, 11 months	11
11th " "	96	133	1	4	7·29	1385·5	10·42	41·67	75·94	27·79	20·06	Colaba, 10 months (left for Delhi, 8th November)	3
20th " "	17	40	—	—	1·40	2352·9	—	—	82·35	30·14	12·81	Colaba, 1½ months (arrived from Barrackpore, 12th November)	13
14th Eastern Division, R.A.	125	179	—	3	11·54	1432·0	—	24·00	92·32	33·79	23·59	Colaba, 12 months	12
21st " "	105	176	—	—	7·72	1676·2	—	—	73·52	26·91	16·05	Colaba, 11 months	11
22nd " "	10	12	—	—	·58	1200·0	—	—	58·00	21·23	17·69	Mhow, 1½ months (arrived from Secunderabad, 13th November).	11
2nd Western Division, R.A	117	250	2	5	12·72	2136·7	17·09	42·73	108·72	39·79	18·62	Aden, 12 months	13
6th " "	19	87	—	—	2·54	4578·9	—	—	133·68	48·93	10·68	Aden, 2 months (arrived from Delhi, 25th October)	—
11th " "	114	207	2	4	8·16	1815·9	17·54	35·09	71·58	26·20	14·43	Aden, 12 months	5
13th " "	77	83	1	5	4·33	1077·9	12·99	64·93	56·23	20·58	19·09	Mhow, 12 months (left for Secunderabad, 8th November).	13
15th " "	95	120	—	1	5·39	1263·1	—	10·53	56·74	20·76	16·44	Aden, 10 months (left for England, 25th October)	13
Total	2,857	4,730	39	56	216·17	1,655·5	13·65	19·60	75·66	27·69	16·73		

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.	Constantly Sick.				
Royal Engineers	34	40	—	1	·70	1,176·4	—	29·41	20·59	days. 7·53	days. 6·40	Kirkee, 12 months	—
INFANTRY.													
2nd Royal Lancaster Regt.	912	954	16	11	47·91	1046·1	17·54	12·06	52·53	19·23	18·38	Ahmednagar, 11 months	13
2nd (King's) Liverpool Regt.	446	1,168	2	12	34·14	2618·8	4·48	26·90	76·54	28·01	10·70	Aden, 10 months (left for England, 25th October)	15
2nd Lancashire Fusiliers	927	1,194	9	7	78·30	1288·0	9·71	7·55	84·46	30·91	24·00	Poona, 12 months	12
2nd South Wales Borderers	91	328	1	—	12·69	3604·4	10·99	—	139·45	51·04	14·16	Aden, 2 months (arrived from Allahabad, 25th October).	—
1st Worcestershire Regiment	858	903	14	7	56·85	1052·4	16·32	8·16	66·26	24·45	23·04	Poona, 12 months	14
1st Loyal N. Lanc. Regiment	795	1,399	6	26	66·75	1759·8	7·55	32·70	83·96	30·77	17·46	Kamptee, 12 months	8
2nd Gloucestershire Regiment	863	1,515	10	9	61·57	1755·4	11·59	10·43	71·34	26·11	14·87	Nasirabad, 12 months	12
2nd Middlesex Regiment	109	129	—	20	10·62	1183·5	—	183·49	97·33	35·66	30·13	Mhow, 1½ months (left for Quetta, 12th February)	12
1st Leinster Regiment	55	70	—	—	2·43	1272·7	—	—	44·18	16·19	12·71	Deesa, 1 month (arrived from Agra, 9th December)	15
2nd Royal Dublin Fusiliers	836	1,557	16	15	59·20	1862·5	19·14	17·94	70·81	25·92	13·91	Karachi, 12 months	7
2nd (King's) Own Yorkshire L. Infantry.	819	1,636	14	19	72·36	1997·5	17·09	23·20	88·35	32·34	16·19	Colaba, 12 months	6
2nd Durham Light Infantry	748	1,204	4	12	60·53	1609·6	5·35	16·04	80·92	29·62	18·40	Mhow, 10 months (arrived from Quetta, 28th February).	6
Total	7,459	12,057	92	138	563·35	1615·6	12·33	18·49	75·49	27·64	17·10		

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.	Invalids sent Home.	Average Number Constantly Sick.	Ratio per 1,000 of Strength.				Average Sick Time to each Soldier.	Average Duration of each Case of Sickness.	Stations occupied during the Year.	Completed Years of Service in the Command.
						Admitted.	Died.	Invalided.	Constantly Sick.				
Depôts, &c.										days.	days.		
Colaba Depôt	80	138	2	7	12·46	1725·0	25·00	87·50	155·75	57·00	33·05	Bombay	—
Deolalee Depôt	726	1,334	6	21	42·33	1837·5	8·26	28·93	58·30	21·34	11·61	Deolalee	—
Karachi Depôt	117	133	3	—	6·47	1136·7	25·64	—	55·30	20·24	17·80	Karachi	—
Convalescents	69	120	1	1	5·03	1739·1	14·49	14·49	72·90	26·68	15·34	Mount Abu	—
„	125	236	1	4	13·16	1808·0	8·00	32·00	105·28	38·53	21·31	Purandhar	—
„	105	84	—	—	4·86	800·0	—	—	46·29	16·98	21·17	Khandala	—
„	34	83	3	—	4·44	2441·2	88·24	—	130·59	47·79	19·58	Taragarh	—
„	56	82	—	—	6·29	1464·3	—	—	112·32	41·11	28·07	Ghizree	—
Garrison Staff and Departments.	166	170	5	9	6·33	1024·1	30·12	54·22	38·13	13·96	13·63		
Military Prison	62	73	2	—	4·28	1177·4	32·26	—	69·03	25·26	21·46	Poona	—
Rest Camp	2	1	—	—	·01	500·0	—	—	5·00	1·83	3·66	Khandwa	—
Various Corps	163	240	6	16	13·16	1472·4	36·81	98·16	80·74	29·79	20·07		
Troops on the March	63	6	1	—	—	95·2	15·87	—	—	—	—		
Total	1,768	2,690	30	58	118·82	1521·5	16·97	32·80	67·20	24·60	16·17		
Grand Total	12,702	20,252	164	271	951·59	1594·4	12·91	21·34	74·92	27·42	17·15		

APPENDICES.

APPENDIX No. I.

REPORT ON THE PROGRESS OF HYGIENE FOR THE YEAR 1893.

By Brigade Surgeon Lieut.-Colonel J. **Lane Notter**, M.A., M.D., Army Medical Staff, Professor of Military Hygiene in the Army Medical School, Netley.

The chief points of hygiene which have attracted attention during the year are as follows :—

I.—*Legislation.*

During the Parliamentary Session of 1893 no legislation of any special sanitary importance took place, although numerous public health questions of varying degrees of usefulness are awaiting settlement and several important Bills were introduced into Parliament with that object. Only a few short and non-contentious Bills passed beyond the stage of first reading, though several of them will undoubtedly sooner or later become law.

A short Act was brought in by the Government, and passed, to enable sanitary authorities in Ireland to take possession compulsorily of land for the erection of temporary cholera hospitals, subject to payment of rent and compensation for damage as the Irish Local Government Board may award. This power only extends to May 1st, 1894, and was passed in view of the approach of cholera last year. The Public Health Act (London), 1891, was amended so that the "expenses incurred by a vestry or district board as sanitary authority "for, and in connection with, the provision of land, wharves, destructors, "plant and equipment for the collection, removal, and disposal of house and "street refuse, shall have deemed to have been expenses for the purposes of "which a vestry or district board may borrow money as expenses incurred by "them in the execution of the Metropolis Management Act of 1855."

The Rivers Pollution Prevention Act has been amended so as to prevent further pollution of rivers. The effect of this short Act will be that if sewage matter is conveyed into a stream, after passing through a sewer vested in a sanitary authority, no matter when the sewer was constructed, the sewage must be considered to pass into the stream by permission of the sanitary authority, and it will be an offence for the sanitary authority to allow it to continue to pass into the stream. It will, however, be sufficient if in the case of a sewer used or constructed at the date of the Rivers Prevention Pollution Act, 1876, the sanitary authority use the best practicable and available means to render the sewage harmless.

Among the Parliamentary Reports issued during the year is that of the Select Committee of the House of Commons appointed "to inquire into the "sufficiency of the existing law as to the disposal of the dead, for securing an "accurate record of the causes of death in all cases, and especially for detecting "them when death may have been due to poison, violence, or criminal neglect." The Committee recommended that in no case should a death be registered without production of a certificate of the cause of death signed by a registered medical practitioner, or by a coroner after inquest, or in Scotland by the Procurator Fiscal; that in each sanitary district a registered medical practitioner should be appointed as public medical certifier of the cause of death in cases in which a certificate from a medical practitioner in attendance is not forthcoming; that a medical attendant should be required before giving a certificate of death to personally inspect the body; that still-births which have reached the stage of development of seven months should be registered upon the certificate of a registered medical practitioner, and that it should not be permitted to bury or otherwise dispose of a still-birth until an order for burial has been issued by the registrar. Another important report issued during the year is that of the Royal Commission on the Water-supply of the Metropolis. The Commissioners have adopted 35 gallons per head per day as a safe basis of calculation for future daily requirements; the statistics for 1891 shows the average consumption for trade and domestic purposes at 32·68 gallons, but a small addition to this is made for increased demands. A large amount of evidence was brought before the Commission as regards the quality of the Thames and Lee water supplies, and it is satisfactory to note that not a single witness founded upon the chemical constitution any charge of unwholesomeness against the water as delivered to the consumer. Bacteriological examination also failed to show the presence of pathogenic organisms in the water. Furthermore the Commissioners report that, notwithstanding the fact that for more than thirty years the inhabitants of London have been drinking water taken from the Thames and the Lee, all the expert witnesses stated that they know of no single instance in which the consumption of this water had caused disease. The conditions which militate against the increase of pathogenic micro-organisms, viz.: exposure to light, healthy environment, attenuation, to which may be added the filtering powers of the gelatinous material which is deposited on the filters, are quoted as affording an explanation of this conclusion.

Wells and springs in the chalk around London are regarded by the Commissioners as capable of furnishing more water than is likely to be wanted in the way of additional supplies for many years to come.

II.—*Literature.*

The Health Officers' Pocket Book. By E. F. Willoughby. London: Crosly, Lockwood, and Son.

This small book is really a condensed guide to sanitary practice and law for medical officers of health and others. It is an excellent little book of reference, in which the facts, formulæ, and data required by those engaged in sanitary work is readily accessible. It is a mine of condensed information of a most varied and useful kind.

The Hygiene, Diseases, and Mortality of Occupations. By J. T. Arlidge. London: Percival & Co.

This is a valuable work, being an expansion of the Milroy Lectures in 1889, as delivered before the Royal College of Physicians. It is a book to be studied not only by members of the medical profession but also by philanthropic legislators; and dealing as it does with all the causes which affect the health of different sections of the community, it constitutes a valuable work of reference for all interested in the welfare of the industrial classes.

A Treatise on Public Health in different European Countries. By A. Palemberg. Translated from the French edition by A. Newsholme. Sonnenschein & Co.

This is not only a very useful book, but, in its way, quite unique, as in it a careful comparison is instituted between the sanitary organisation of continental countries and those of England.

A special section referring to England brought quite up to date is added by the translator, which is not only comprehensive but well written.

Vaccination and Small-Pox in England and other Countries. By E. J. Edwards. J. & A. Churchill.

At a time when the notions of individual liberty are being extended to the freedom to spread contagious disease, the appearance of this book constitutes an admirable contribution not only to the literature of vaccination but to its facts and figures.

Guide to Health in Africa, with Notes on the Country and its Inhabitants. By Surgeon-Major T. H. Parke, A.M.S. London.: Sampson Low, Marston, & Co.

In this small brochure the late medical officer of the Emin Pasha Relief Expedition attempts to give in a small compass a good deal of information that is at once useful and reliable. In the earlier pages of the book considerable information is given concerning the geography, climate, fauna, and flora of the African continent, which cannot be without interest to all serving in that part of the world.

The Climate of Rome and Roman Malaria. By Professor Tommasi-Crudelli. Translated by C. C. Dick. London: Churchill.

This has been a somewhat disappointing work, as practically it is not up to date, no mention being made of the investigations of Laveran and others upon the blood parasites of malaria. The work treats exhaustively of the climate of the Roman Campagna, but leaves much to be desired in the way of reliable information upon the true pathology and etiology of paludism.

Lectures and Essays on Fevers and Diphtheria. By Sir William Jenner, G.C.B. Rivington & Co.

Though not strictly speaking a book on hygiene, the appearance of this work demands notice not only from the personality of its author, but from the fact that it treats of many questions which are of practical interest and value to the army medical officer. The most remarkable feature of these lectures is, that while mainly now reprinted as they were uttered some forty years ago, and based purely upon personal, clinical, and pathological research in days when methods of inquiry were cruder than at present, still they conform to the experience of to-day, and afford an exceptional source of encouragement to those either engaged in or only just entering upon the field of medical research.

Lectures on Sanitary Law. By A. Wynter Blyth. London: Macmillan.

This book constitutes practically the only general summary in book form of the various Acts of Parliament and general legislation relating to the public health.

The contents of the volume are really the lectures upon sanitary law as delivered by the author at the College of State Medicine. The value of these lectures is enhanced by the quotation of important cases illustrating the every-day administration of sanitary law.

On Sewage Treatment and Disposal for Cities, Towns, Villages, Private Dwellings, and Public Institutions. By Thomas Wardell. Manchester: John Heywood.

Every student of sanitation early realises that since the introduction of the water-carriage system of sewage, its convenient and effectual disposal has been the bugbear of both engineers and chemists. This volume is mainly devoted to the discussion of the merits of the various processes, electrical, chemical, and natural, which from time to time have been proposed to meet the difficulties of sewage disposal.

Being written as it is by an expert chemist, the volume ranks as a standard work for reference by engineers, chemists, and medical men.

Healthy Hospitals: Observations on some Points connected with their Construction. By Sir Douglas Galton, K.C.B. Oxford: Clarendon Press.

The author of this work is already favourably known for his volume on healthy dwellings. In this work an exhaustive analysis is made of the investigations of all authorities who have treated this large question with the result that the book affords an excellent volume for reference by all those engaged in either building or managing hospitals.

Analysis of Milk and Milk Products. By H. Leffmann and W. Beam. London: Kegan Paul & Co.

Owing to the remarkable modification and improvements which have taken place during recent years in the various analytical processes of milk, considerable confusion existed as to their relative merits and details. The appearance of this book, embodying the facts as to those in present use, has filled a long-felt want; more particularly since the authors, who are American, acknowledge and bear testimony to the merits and value of the work of English analysts in this direction.

Hygiene of Warm Climates. Edited by A. Davidson. Edinburgh: Pentland.

This is a comprehensive work, filling a place in the requirements of the profession, which offers a ready source of reference to the peculiar needs of military medical officers. Although the subjects are not all of equal interest, still some are of exceptional value, and, being written by various authors, each of practical experience, leave little to be desired.

Manual of Public Health: Laboratory Work. By K. R. Kenwood. London: Lewis.

In this volume the author has endeavoured with considerable success to give a concise statement of the various analytical methods likely to be required by a medical officer of health in his every-day work. The methods have been judiciously chosen, and if, perhaps, not embracing some of the latest and more elaborate analytical methods, are still eminently practical. The book is much strengthened by a chapter upon bacteriological methods written by Dr. Boyce, of University College.

Public Health and Demography. By E. F. Willoughby. London: Macmillan.

This is a new edition of an earlier work by the same author. Though only a small volume, it practically covers the whole subject of hygiene. The matters are discussed in a remarkably condensed manner and well up to date. The most commendable features in the book are the last two chapters, which treat respectively of vital statistics and duties of sanitary officers, especially in regard to the various sanitary enactments.

A Treatise on Hygiene and Public Health. Edited by Shirley Murphy and W. Stevenson. Vol. II. London: J. & A. Churchill.

The first volume of this work, which appeared in 1890, has now been followed by the issue of the second volume. This is well up to the standard attained by the first. Its best chapter is that upon the pathology of the infective diseases by Dr. Klein, which gives within a limited space the best *résumé* in the English language of this difficult and ever varying subject. The various volumes of this treatise should be in the possession of every medical man, whether engaged in preventive disease work or not.

Enteric Fever in the Tees Valley. Supplement to the Twenty-First Report of the Local Government Board, 1891–92. London: Eyre and Spottiswoode.

This report by Dr. Barry is of much interest and importance as a solid contribution of fact on the general question of the etiology of enteric fever. The incidence of the fever fell on those districts which drew their water supply from the Tees, while those who gained their supply from other sources escaped. He showed that the attacks were spread over all the districts—10 in number—supplied with Tees water, and that several districts were attacked simultaneously, while apart from the water supply there was no difference of any importance between those drinking the Tees water and the other districts. There was also found an accumulation of filth upon the banks of the Tees at places above the intake, and that a flood, which happened on August 13th, 1890, must necessarily have washed this filth into the river; and that the time when the outbreak declared itself, after allowing for the incubation period tallied with the view that the outbreak was caused by this pollution.

Ventilation and Heat. By John S. Billings. New York: *The Engineering Record*, 1893.

In this book is an interesting account of the history of ventilation as it first began to be practised in connexion with the House of Commons in 1660 down to modern date. The chemical and physical properties of air are clearly given, and the results of investigators collected and tabulated. Dr. Billings discusses the question of sewer gas as a means of transmitting specific diseases and states, that although some English sanitarians disagree with him, there is no satisfactory evidence that enteric fever has been spread by gases coming from foul sewers. The engineering questions connected with heating and ventilation are carefully considered and the methods appliable to various kinds of buildings gone fully into. The work contains many excellent illustrations.

III.—*Work of Societies.*

The annual meeting of the British Medical Association was held at Nottingham. The Public Health Section was presided over by Dr. H. E. Armstrong, who delivered an address on cholera precautions in the north of England.

The measures taken by the authorities, or with their concurrence, were of two kinds: first, those for the exclusion of cholera, and secondly, those for the limitation and extinction of the disease that may pass the first line of defence. Under the first head come the provisions made by the port sanitary authorities: these include the ordinary health department of the port with the necessary staff, and means for removing to the isolation hospital direct any sick suffering from an infectious disease. Ships arriving from infected ports were at once visited on arrival and the crews carefully examined. Means were also provided for the complete disinfection of clothing, and for this purpose a hulk was fitted up with a disinfecting apparatus, which could be towed to the side of any ship to be disinfected. For the limitation and extinction of the disease a new cholera hospital has been built to receive cases, and the city was divided into districts with a special set of officers, nurses, inspectors, disinfectors, &c. The corporation undertook the removal of all excreta from patients treated in private houses: the excreta being received in a pail with close-fitting cover, and a strong solution of bichloride of mercury used to destroy the infection. After disinfection the contents of the pail were allowed to pass into the drains. No pail could be emptied until the inspector had satisfied himself that its contents were properly disinfected, and for this purpose he was ordered to visit the house three times during the day.

Dr. J. Eustace Hill contributed a paper on diphtheria. He stated the disease was more common in districts with a damp, cold soil, and in houses that were dark and structurally damp conditions existed which favourably affect its propagation and virulence. There was not any authenticated instance of diphtheria being produced by drinking water. In this country, also, the disease had to some extent a geographical distribution, and did not appear to be the result of those general insanitary conditions which were usually considered the factors of a high general and zymotic death-rate. The chief factor in the spread of the disease was school attendance; the result of children suffering from a mild form of the disease remaining at school. With regard to this point I may mention that Dr. Thorne Thorne, in a lecture delivered a few weeks ago at the Sanitary Institute; showed the effects that has followed on the compulsory attendance of children in board schools, and he attributes the large increase of diphtheria cases to the massing together of the children in these schools; he does not believe that it is necessary to attribute the occurrence of the disease to a previous case, but is rather inclined to the view that there is a progressive development of the property of infectiveness. If the contagia of the acute specific diseases belong to the vegetable world he knows no grounds for refusing to believe that the organisms capable of producing a minor and an uncommunicable disease in particular stages of their growth may, in other stages of their growth, or in the course of their subsequent development, become capable of producing a major disease communicable from person to person. This, he stated, is not a question of the development of a living organism out of matter independently of antecedent life, but merely the production, by means of a process of evolution, of that which gives to an already existing organism that property by which it becomes infective; a property which it may, perhaps, lose directly it is deprived of the circumstances which favoured its development, in much the same way as special characteristics may be artificially developed in higher plant life, and be as easily lost again.

The Congress of the British Institute of Public Health was held in Edinburgh, in July, under the presidency of Dr. Henry D. Littlejohn, the Medical Officer of Health for the City of Edinburgh. Several papers of interest were read at this meeting. Dr. Armstrong, in his address to the section on Sanitary Engineering, described the nature of the connexion which the science of engineering had with the maintenance and promotion of public health. In speaking of the disposal of sewage by irrigation, he said that it was capable of being abused as well as used, and the present state of knowledge seemed to indicate the following precautions as being necessary in regard to the irrigation of land:—(1.) The selection of suitable ground. (2.) When sewage is used it should be brought on the land in as fresh a state as possible. (3.) In all cases the flow should be regulated so as to prevent stagnation. (4.) When the subsoil is of a more or less retentive nature, or when the surface is too flat to admit of an easy flow, subsoil drainage must be added with sufficient falls to facilitate filtration. Another question was whether or not we are justified in taking a water supply from a river that was in any way liable to contamination by town sewage.

This question, he said, needed further and close investigation, but the present knowledge of this subject might be summed up as follows:—(1.) That rivers did exert an enormous oxidising power on dead organic matter. (2.) That fully-developed microbes could neither exist for any length of time nor multiply in running water, and consequently they rapidly disappeared therefrom. (3.) That the spores of these organisms had the power of preserving their vitality in running water and might, therefore, become a source of danger to those who drank it; but in most cases the volume of water in a river was so enormous compared with the number of organisms conceivably present as to reduce to an unusually remote possibility the chance of a greater number of spores entering the system than it was naturally able to eliminate. Assuming these premises it was the duty of the engineer to draw the supply at a point as remote as possible from that at which contamination might occur; to break up the stream as much as possible so as to subject the water to the maximum action of air and light; to make ample provision for settlement before filtration in time of flood; to design the filter beds so as to ensure a slow, equable, and complete filtration; and to endeavour to discover some substance, innocuous to the human organism, but destructive alike to germs and spore that might be added to the filter to ensure their destruction.

III.—*Special Points of Hygiene.*

Filtration of Potable Waters.—In connection with an inquiry into the causes of cholera at Hamburg, Professor R. Koch has published a paper on Water Filtration and Cholera, which is, perhaps, one of the most interesting monographs that has appeared during the year. Cholera broke out in the three towns of Hamburg, Altona, and Wandsbeck, which are contiguous to each other, and really form a single community, and do not differ except in so far as each has a separate and a different water supply. Wandsbeck obtains filtered water from a lake which is hardly at all exposed to contamination with fœcal matter. Hamburg obtains its water in an unfiltered condition from the Elbe, above the town, and Altona obtains filtered water from the Elbe below the town. Hamburg was notoriously badly visited by cholera, whereas Wandsbeck and Altona, if one excepts the cases brought thither from Hamburg, were nearly quite free from the disease. The conditions of the cholera epidemic along the boundary between Hamburg and Altona were also remarkable. On both sides of the boundary the conditions of soil, buildings, sewerage, population, everything of importance in this respect, were the same, and yet cholera in Hamburg went right up to the boundary in Altona and then stopped. The cholera not only marked the political boundary, but even the boundary of the water supply between the two towns. In two great populations nearly all the factors are the same, one only is different, and that the water supply. The population supplied with unfiltered water from the Elbe is seriously visited by cholera; the population supplied with filtered water is only visited by the disease to a very small extent. The difference is all the more important as the water of Hamburg is taken from a place where the Elbe is relatively but little contaminated; whereas Altona resorts to the water of the Elbe after it has received all the liquid and fœcal refuse of 800,000 people. Under these conditions there is no other explanation for the scientific thinker but that the difference in the increase of the cholera on these two populations was governed by the differences in the water supply, and that Altona was protected against the cholera by the filtration of the water of the Elbe.

Professor Koch, after briefly reviewing the various theories advanced as to the probable causes of the outbreak, enters fully into the questions of filtration. The problem, he says, of filtration is to purify water from the matter held in suspension. Matter which has been dissolved passes through the filter with hardly any or no perceptible change. He attributes little importance to the chemical examination as this inquiry deals only with the dissolved impurities.

The real filtration, where sand is used as a filtering medium, does not take place in the sand, but by a deposit from the still unpurified water, a layer of mud is formed on the top of the sand, and this layer of mud which is over the sand is the real filter which retains the suspended constituents from the water. This has been very clearly stated in the *Report of the Royal Commission on the Metropolitan Water Supply* as follows:—

"The action of a filter-bed appears to be partly mechanical, partly vital; but the mechanical action which is confined, or almost confined, to the holding back of the comparatively grosser substances suspended in the water and which was supposed until recently to be the only operation in a filter, is now held to be of far less importance than the vital action, which depends on the activities of the gelatinous layer of living matter gradually deposited on its surface. A new filter, composed of perfectly purified sand, has little or no effect in producing either chemical or bacteriological purification; but in the course of use a layer charged with living microbes is deposited upon the surface, and it is by these organisms which constantly increase in number and also penetrate the sand to a slight distance, that both the nitrification of organic matter and the arrest of other microbes is effected.

"Thus the longer a filter has been in use the more efficient it becomes, provided, of course, that the surface layer has not acquired such density as to interfere with the passage of the water; and consequently the recommendation which was commonly given in former times, that a filter bed should be cleansed as often as possible, appears to have been a mistake; cleaning, by which the efficient superficial membrane is removed, should only be carried out when the filter becomes unduly blocked.

"The sand layer should never be allowed to get below a certain thickness, about 30 cm., and it is also necessary that the rate of flow through the layer should be a fixed one, about 100 mm. (3·95 inches) in an hour.

If a filter works satisfactorily in every respect there will be found, as experience shows, less than 100 germs capable of development in 1 c.c. of filtered water, and this is independent of the amount of bacteria contained in the natural water, whether such amount should be 100,000 or only a few hundred in a cubic centimetre. But the slightest disturbances in the process of filtration, for instance, the quickening of the pace of filtration to over 100 mm. per hour, disturbances of the surface mud, covering, &c., tend as a consequence to an immediate increase of germs in the filtered water. Even the very best filtration processes are not sufficient to keep back all mixed organisms, and, according to all appearances, we have with the present processes reached the limits of that which is practicable. Dr. Koch then shows that the epidemic of cholera at Altona affords ample proof that we may be satisfied in practice with these results.

As regards domestic filters, Dr. Koch states that he is not aware of any small filters which suffice for practical wants for any length of time, and he advises persons to place no dependence on them when cholera is prevalent. Far better, he states, are the results of natural filtration. Rain water, when it sinks into the ground, and ultimately becomes subsoil water, passes through far thicker layers, and with far less rapidity, than river water when passing by artificial filtration through sand filters. As a rule the soil is of a material much more finely granulated than the comparatively coarse-grained sand of a filter, and it is fair to expect that the subsoil water, after passing sufficiently thick layers of this finely-granulated soil, will be either very poor in micro-organisms or quite free from them. There is, therefore, no reason to keep out of consumption the subsoil water, which can be found nearly everywhere. On the contrary, we cannot find a better filtered water or one more perfectly protected against infection. The only difficulty is to bring this perfectly purified water into consumption without its being later on again contaminated and infected.

If the subsoil water is raised by means of an iron conduit pipe, the possibility of contamination is avoided. The soil is so close to the pipe that no real disturbance of the filtering layers of the soil are produced by the boring. All liquids, even those most strongly contaminated, must, before reaching the depth from which the water is raised, pass through thick and efficient filtering layers, by which they are rendered quite absolutely free from infectious matter.

The most rational way of obtaining subsoil water is undoubtedly by the use of iron pumps, and these have, unfortunately, been too little used. Almost everywhere the subsoil water is obtained from old-fashioned wells. From the surface such wells are almost always exposed to contamination, and are also as a rule badly constructed. These should not be tolerated in future.

In those places where wells of this description are already in use, it will be comparatively easy, in most cases, so to alter the construction of the well as to remove all danger of contamination from above. It is only necessary to give to the well the same protection, or approximately the same protection, against contaminating percolations by means of filtering layers of soil, such as exist in the case of a simple pump. To achieve this, one should proceed by filling the well up to the highest water point with gravel, and over the gravel with sand up to the very top. Hence it is assumed that the well is already provided with an iron pipe, or, if this is not the case, that it will be provided with one before the gravel and sand are put in.

In this way the well is turned into a pump, with the advantage over ordinary pumps that its lower end dips into a layer which gives no resistance to the subsoil water. Wells protected in this or similar methods by good filtering layers give the same protection against the infection of water as is given by sand filtration of the great waterworks.

In fact, they really give a greater protection, for they are not exposed to the many disturbances in the process of filtration referred to previously, and are also not affected by frost.

Disposal of Sewage.—Considerable interest has arisen in reference to the disposal of sewage in towns by the introduction of a new process by electrolysis. It will be remembered that the application of electricity in the treatment of sewage was first introduced by Mr. Webster.

The chemical changes that take place in sewage when it is electrolysed depend chiefly on the fact that water, as well as sodium, magnesium, and other chlorides (which are always present in sewage) are split up by the electric current into their constituent parts. Thus we have at the positive pole chlorine and oxygen set free, and these elements are liberated in a nascent state, a condition in which they are intensely active, so that the organic matter in the sewage is rapidly oxidised into innocuous compounds.

After many trials Mr. Webster came to the conclusion that cast-iron plates, employed as electrodes gave the best results. In this process there are large precipitates of ferric and ferrous oxides due to chemical action, and consequently a continual wearing away of the plates with an increase in the sludge, which, consisting as it does of the precipitated oxides of iron, has no manurial value, and has generally to be shipped out to sea.

This process has now been made more effective by M. Hermite, who has introduced his method into the town of Havre, and with considerable success.

This system is based upon the electrolysis of sea water. The electric current decomposes the chloride of magnesium, whilst the chloride of sodium serves as a conductor. The result is a liquid disinfectant of great power. It is almost odourless, leaves no residuum when used for purposes of flushing, and is perfectly inoffensive. The solids in the sewage are dissolved, and the organic matter rendered innocuous. The resultant liquid is odourless, does not readily decompose, and contains little else besides the disinfectant and a little phosphates. All micro-organisms are destroyed, the liquid being rendered sterile. Although sea-water renders the application of M. Hermite's system considerably cheaper it is not essential to it. When not procurable a solution of chloride of magnesium can be used instead, a parallel chemical action being produced giving precisely similar results. At Havre a central station has been constructed, which is supplied with electric appliances and tanks for storing the water, and here the disinfectant is prepared. From thence it is distributed by pipes through the streets, somewhat similar to water and gas. It can be laid on to houses, which will have their drains disinfected by this means, as well as thus helping to disinfect the sewage in the mains and prevent the formation of sewer gas. If all that is claimed for this method be true, it is certain to be largely used in this country. Already Worthing has taken measures to test its efficiency, and the results of the experiments there will be looked for with considerable interest.

Mr. Scott Moncrieff has proposed a method for the bacteriological purification of sewage. This process consists essentially in passing the sewage upwards through a filtering medium 14 inches in depth, and composed of successive layers of flint, coke, and gravel. The process is not a new one, and upward filtration has long since been abandoned in favour of intermittent downward filtration. The results of this system are not such as to lead us to expect that it will be adopted generally.

Disinfection of Tuberculously-Infected Houses.—An important paper has been contributed on this subject by Drs. Sheridan Delepine and Arthur Ransome, F.R.S. The object of the experimenters was to test the value of disinfection in houses in which phthisical patients lived, and who had the disease either in the advanced stage or in whose sputum the bacillus of tubercle had been discovered. The disinfectant used was chlorine. Pieces of paper were carefully sterilised in glass capsules and subsequently infected with tuberculous material: the capsules were opened just before the process of disinfection had commenced and sealed again immediately afterwards. In all cases control experiments were made and treated in the same way. The results were unsatisfactory, the infective power not having been destroyed. Sulphurous acid also yielded very unsatisfactory results, and it would seem that for tubercular matter, ordinary disinfection by these methods affords little security.

Dr. Shalders Miller examined the dust in a house in which several of the occupants had suffered from phthisis. In a portion of dust removed from the top of the dining room door, he found no fewer than eight groups of tubercle bacilli on a single microscopic slide, one of the groups numbering several hundred forms. The infectious nature of tubercular diseases is now all but universally acknowledged, and there is a considerable body of proof of the communicability of phthisis from man to man by ordinary means. It is, therefore, desirable that the risk of contact with the tubercular poison should be as far as possible diminished. In fatal cases not only should the room be thoroughly disinfected, but also the bedding and clothing and every possible means taken to eradicate the disease from the dwelling. This might be undertaken by the Sanitary Authority, as is the case with other infectious diseases.

V.—*Work in the Hygienic Laboratory, Netley.*

Several samples of earth were received from Aldershot for examination, as enteric fever has been somewhat prevalent at that station. The examination made of these earth samples was entirely bacteriological, being directed to the determination, if possible, of the presence in them of bacteria known to be hurtful to man, more especially the organisms associated with the presence of enteric fever.

All the soil when received was moist. Although many cultures have been made from the various soils, the results are negative. Large numbers of moulds, bacteria, and cocci have been isolated and examined; in fact, the samples are swarming with minute life as might be expected. Notwithstanding care and fractional cultivation, no forms purely pathogenic to man have been isolated. Large numbers of bacteria usually associated with putrefactive process were noted in all the samples, especially in the samples marked P 10, P 24, and Q 15.

The importance of the fact that attempts to discover the specific bacillus of enteric fever in the earth samples has failed is somewhat discounted by the well-known difficulty in isolating this micro-organism from complex and impure media.

With reference to any possibility of these earths, even if containing pathogenic bacteria, being able to impart infection by aërial diffusion, it is noteworthy that, on receipt, all the samples were moist, some of them very much so, a condition which if the usual one in which they lie under buildings, is against much likelihood of their imparting infection in the form of particulate germs to the air above them.

I am unable to report that any of these earth samples contain micro-organisms capable of causing human diseases, but judging by the successive presence in them of putrefactive bacteria, I am of opinion that these particular soils are such as should not be allowed to remain directly exposed beneath the floor and basements of inhabited buildings. Their condition and composition is suggestive of percolation and fouling by impure subsoil water.

Disinfectants.—Izal, which is a new disinfectant extracted from an unknown oil obtained from certain coke ovens, is a creamy-looking emulsion, having an earthy smell. It is readily mixed with water, forming a milky emulsion.

Its disinfecting properties have been tried upon the following organisms:—

1. *Bacillus of anthrax* (spore containing).
2. *Bacillus subtilis* (sporeless and spore containing).
3. *Bacillus mesentericus vulgatus* (spore containing).
4. *Bacillus typhosus* (Eberth-Gaffky).
5. *Comma bacilli* of cholera (Koch).
6. *Streptococcus pyogenes.*

The method adopted has been to take by means of a previously sterilized platinum loop a small portion of growth from a recently prepared pure culture of the micro-organism to be experimented with and mixing it thoroughly into an emulsion with 5 cubic centimetres of distilled water. Half a cubic centimetre of this specifically infected water was then pipetted into 3 cubic centimetres of a mixture of Izal and boiled distilled water of varying strengths, viz., 1, 5, 10, 15, 20, 40 and 50 per cent.

After varying periods of time, viz., half an hour, one hour, and twenty-five hours, agar and gelatine tubes were inoculated in the usual way by means of a platinum needle from these different mixtures of izal emulsion and the infected water.

Simultaneously with these, control tubes were inoculated from the infective water, and the whole placed in incubators at suitable temperatures, viz., 22° Cent. for gelatine cultures and 27° Cent. for agar.

The general results of these series of observations may be summarized in the following manner.

Anthrax spores produced typical growths after 24 hours' exposure to the one per cent. of izal. After half an hour's exposure growths were obtained from the 5 per cent., but none from the 10 per cent.

Bacillus subtilis (sporeless) yielded no growths after half an hour's exposure to a one per cent. of izal.

The spores of this bacillus gave growths after half an hour's exposure to the 1, 5, 10, 15 and 20 per cent. izal solution. The latter, however, was of very feeble growth. Subsequent examination after one hour's exposure to this 20 per cent. solution gave no growths. After 24 hours' exposure to the 10 and 15 per cent. solutions no growth could be obtained, while the 5 per cent. yielded a typical growth up to 56 hours.

Bacillus mesentericus vulgatus (spore containing).—This was found to be very hardy and survived exposure for 48 hours to 20 per cent. of izal. A 40 per cent. izal only checked growth after 16 hours' exposure. Exposure to a 50 per cent. emulsion gave no growth after half an hour.

Bacillus typhosus.—An exposure for half an hour to a one per cent. izal emulsion sufficed to prevent the growth of this micro-organism.

Comma bacilli of cholera were destroyed by half an hour's exposure to a one per cent. of izal.

Streptococcus pyogenes yielded typical growths after 24 hours' exposure to a one per cent. of izal; after exposure to a two per cent. mixture growths were obtained up to 5 hours. No growth was obtainable after 15 minutes' exposure to a 3 per cent. of izal. Exposure for 5 minutes to a 4 per cent. izal gave no growth.

Izal appears from the foregoing to be a disinfectant of considerable power, one per cent. of it preventing the growth of both cholera commas and typhoid bacilli after half an hour's exposure.

A 3 per cent. emulsion appears to destroy the streptococcus of pus, while the spores of anthrax are killed by half an hour's exposure to a 10 per cent. emulsion. Its action appears to be less powerful upon the highly resisting spores of *B. subtilis* and *B. mesentericus*, but as these are not known to be pathogenic to man, and, moreover, exceptionally hardy species, this fact in no way detracts from its disinfecting powers.

It is claimed for izal that it is non-poisonous—on this point I have no knowledge—but, judging from these experiments, izal may be regarded as a disinfecting agent of considerable value.

Its freedom from objectionable smell and its easy miscibility give it priority over carbolic acid, while its alleged non-poisonous properties are suggestive of greater practical use than corrosive sublimate.

The following is a list of the samples of the waters, foods, &c., sent to the Hygiene Laboratory at Netley for special analyses, and were reported on to the War Office during the year:—

	No. of Samples.
Water	65
Butter	3
Meat biscuits	1
Concentrated milk	1
Filters	2
Dried vegetables	7
Milk	3
Pemmican	1
Meat extracts	1
First field dressings	2
Flour	4
Earth	2
Mortar	3
Bread	2
Emergency ration	2
Mineral waters	
Disinfectants	
Sewage effluents	

The samples of water examined are classified as follows:—

"Fit for use"	28
"Usable, but require filtration"	22
"Unfit on account of organic impurity and of excessive hardness and chlorides"	15
Total	65

The following table gives the means of these analyses in parts per 100,000:—

Table of Drinking Waters according to Purity.

No.	Class of Waters.	Chlorine.	Oxygen required for Organic Matter.	Ammonia.		Nitric Acid.	Hardness.	
				Free.	Albuminoid.		Total.	Fixed.
28	"Fit for use"	3·96	0·0431	0·0045	0·0068	2·0231	16·7	8·4
22	"Usable, but requires filtration."	5·45	0·0623	0·0035	0·0139	1·8021	17·9	10·8
15	"Unfit on account of organic impurity and of excessive hardness and chlorides."	19·60	0·1137	0·0212	0·0251	4·8201	33·9	19·7

A large number of these samples were also examined bacteriologically; and in every case of a suspicious water the number of micro-organisms present were noted. In no case was any specific pathogenic organism found.

APPENDIX No. II.

LIST OF OPERATIONS PERFORMED AT THE ROYAL VICTORIA HOSPITAL, NETLEY, DURING THE YEAR 1893.

By **Brigade Surgeon-Lieut.-Colonel W. F. Stevenson**, Army Medical Staff, Professor of Military Surgery, and Surgeon-Captain Whitehead, Assistant Professor.

Operations.	Number of Cases.	Diseases.	Results.				Remarks.
			Completely successful.	Partially successful.	Failed.	Died.	
Amputation of thumb through 1st phal.	1	Compound fracture.	1	—	—	—	Result of injury by cog-wheels.
Dilatation of sphincter and incision of sinuses.	6	Fistula in ano -	6	—	—	—	
Operation for radical cure.	3	Hernia, inguinal -	3	—	—	—	
Excision of glands, neck.	2	Scrofula - -	2	—	—	—	
Extraction of foreign bodies.	1	Gun-shot wound -	1	—	—	—	Grains of shot (about 40) from around ankle.
Injection of pure carbolic acid.	2	Varix of leg -	—	2	—	—	
Excision of dilated veins	3	Do. -	3	—	—	—	
Removal of glands, groin.	6	Suppuration of glands.	6	—	—	—	Buboes of long standing, complicated with sinuses.
Incision and drainage -	4	Abscess of liver -	3	—	—	1	
Do. do. -	7	Bone disease -	3	3	—	1	Cases of chronic abscess.
Circumcision - -	2	Phimosis - -	2	—	—	—	
Enucleation of eye-ball	3	Staphyloma -	3	—	—	—	
Iridectomy - -	1	Recurrent iritis -	1	—	—	—	Syphilitic.
Removal of sequestra -	7	Necrosis - -	7	—	—	—	
Forcible extension and flexion.	2	Ankylosis - -	2	—	—	—	Knee 1, elbow 1.
Exploration - -	1	Vesico-intestinal fistula.	1	—	—	—	Open in groin.
Restoration of nose -	3	Syph. second -	—	3	—	—	On one patient.
Excision of head of femur.	1	Hip joint disease -	—	—	—	1	
Excision of elbow -	1	Scrofula - -	1	—	—	—	
Wiring fragments of infer. max.	1	Multiple injury -	1	—	—	—	
Wiring fragments of patella.	1	Fracture - -	1	—	—	—	

Operations.	Number of Cases.	Diseases.	Results.				Remarks.
			Completely successful.	Partially successful.	Failed.	Died.	
Removal of tumour	1	Lipoma	1	—	—	—	On back of neck.
Do. do.	1	Wen	1	—	—	—	On head.
Excision of veins	2	Varicocele	2	—	—	—	
Litholopaxy	1	Vesicle calculus	1	—	—	—	
Lithotomy, supra pubic	1	Do.	1	—	—	—	
Dilatation of sphincter, and scraping.	1	Ulcer of rectum	1	—	—	—	
Division of fasciæ and tendons.	1	Hammer toe	1	—	—	—	
Mastoid cells opened	3	Disease of middle ear.	2	1	—	—	On two patients.
Division of fasciæ	1	Contraction of Palmer fasciæ.	1	—	—	—	
Wiring humerus	2	Ununited fracture	—	—	2	—	
Removal of loose cartilage (knee).	1	Loose cartilage	1	—	—	—	
Castration	3	Fungus testis	3	—	—	—	
Scraping under an anæsthetic.	1	Lupus of nose	1	—	—	—	
Total	77	Total	63	9	2	3	

Remarks on some of the Operation Cases.

Fistula in ano.

Some of the cases of anal fistula were very extensive, having long sinuses opening on both sides of the anus and perineum, and some of them had been operated on previously but had re-opened. In the cases in which sinuses existed on both sides it was always found that a sinus branched off at right angles to the one communicating with the bowel at the site of the original abscess, passed around the rectum over the coccyx, and opened on the buttock of the opposite side. The failure to find and lay open this "dorsal sinus" is usually the cause of want of success in operations on these cases. Forcible dilatation of the sphincter is almost a necessity in operations for anal fistula, and was done in all our cases. The lining membrane of the sinus tracks, often of a hard cartilaginous character, was scraped away with a sharp spoon, and the incisions packed with iodoform gauze. After operation the bowels were kept confined for five days by the internal use of a mixture containing catechu and a little opium. The lower sphincter was partly or completely divided in every case, but loss of control over the contents of the lower rectum was not complained of in any instance.

Varicose veins.

Five operations for varicose veins of the leg were performed, two by means of the injection of a minim of pure carbolic acid into the vessels, and three by excision of portions of the dilated veins. The carbolic acid was injected at different situations along the course of the vessels, about three inches apart, the circulation having been previously stopped by means of an Esmarh's bandage placed above the site of injection nearest to the groin. This treatment did not prove very satisfactory, and excision was performed in the other cases. The number of excisions in each case varied from 6 to 15; about an inch of the vessel was removed between two aseptic silk ligatures, through a small incision which was afterwards closed by continuous horse-hair suture, dusted with iodoform and covered with alembroth wool. The ligature was of fine silk, and had been previously boiled in 1–20 carbolic solution for two hours on five or six days, with intervals of two days between each boiling; it was then kept in 1–20 lotion. Suppuration never took place, but in one or two instances the incisions did not heal by first intention, the sutures or ligatures, no doubt, in these cases being in fault. Most of the men so operated on returned to duty, showing no signs of enlarged veins at the time of discharge from Netley.

Varicocele.

Two cases of varicocele were operated on by excision of the diseased veins between two ligatures. The material used for ligatures was the same as that used in the cases of varicose veins, and, when the veins had been excised, the stumps of the ligatured vessels were brought together by tying the ligatures in a reef knot, in order to give support to the testicle. The result of this operation, so far as we had time to observe it, was satisfactory.

It is most desirable that cases of varicose veins and of varicocele should be more frequently operated on at foreign stations before invaliding the men subject to these complaints than is the case at present. All these men had been sent home as "unfit for further service," but after operation all, except those suffering from some other complaint unfitting them for service, returned to duty. With a thoroughly aseptic condition of the wounds made in these operations there is absolutely no danger to be apprehended from their performance, except that inseparable from the use of an anæsthetic.

Abscess of the liver.

Four cases of abscess of the liver were treated by aseptic incision and drainage, with one death, abscess of the brain being the cause of the fatal termination in this case. The amount of pus given exit to in the three successful cases varied from 30 to 60 ozs. in all the abscesses were reached between the ribs (between 7th and 10th interspaces) in the mid-axillary line or behind it. The diagnosis had been previously made certain by means of the aspirator needle. In one of these cases a very severe attack of pneumonia supervened on the fourth day after operation, and lasted about ten days, nearly proving fatal; but eventually it cleared up, though leaving the man extremely emaciated and weak, and he recovered perfectly. In another, in which 40 ozs. of pus had been evacuated, several patches of tough membrane, many square inches in area, escaped from the abscess cavity with the fluid contents. Possibly the abscess in this case was a suppurating hydatid cyst, and the membrane was the cyst wall.

The fatal case was that of Private C——, service 6 years, of which three had been passed in India. He had pneumonia of the right side in June, 1893, was invalided home, and arrived at Netley in November. On arrival here he was very weak and greatly emaciated; he suffered from cough, which was constant for two or three days, during which he expectorated large quantities of what was evidently pus from a liver abscess, the cough then ceasing for two or three days. On several occasions this sequence of events occurred, and it was evident that he was evacuating any abscess of the liver through the lung. On 18th December he was put under chloroform and the abscess searched for with the aspirator. It was found at the third insertion of the needle, in the 10th interspace in the mid-axillary line. The abscess was then freely laid open, and as the ribs were found to be so close together that no drainage tube could be put in, about 1½ inches of 10th rib was excised, the periosteum having been first removed by means of the raspatory. He was very weak after the operation and the cough was troublesome, but the abscess cavity steadily lessened in depth up to the day of his death. On fourth day after operation it was noticed that he had paralysis of the left side of the face and of the left leg and arm, but he was quite sensible and could answer questions. He gradually became comatose; the paralysis continued, and he died on ninth day after operation. At the post-mortem that portion of the abscess cavity which had been in the liver substance was found to have completely healed, but part of it (about the size of a hen's egg) still remained in the lung tissue; the right half of the diaphragm, the right lobe of the liver, and the lower part of the right lung were firmly adherent to each other, and the abscess cavity had evidently occupied the liver and lung tissues to about an equal extent. In the brain a large abscess and much softened brain tissue was found at the upper and posterior portion of the right cerebrum. No collections of pus were found elsewhere.

In the treatment of cases of suspected abscess of the liver the great point is to make the diagnosis of the case certain, or nearly so, one way or other, while the patient is under an anæsthetic, by means of the use of a good sized aspirator needle passed into the liver substance in many situations until one makes up his mind either that no abscess exists or that he cannot reach it; when, on the other hand, pus is discovered the operation by incision and drainage should be proceeded with immediately. At Netley we use a large needle with a groove on one side to pass into the abscess cavity on removal of the aspirator needle. We know that the point of this is in the cavity, because immediately it enters it pus flows through it, and then the groove guides the point of the knife in exactly the right direction. Excision of a portion of rib is necessary only when a large tube cannot be got into the abscess without this addition to the operation. As regards irrigation of the cavity opinions differ; here it is always done, the only point requiring attention being that care must be taken that the exit for the irrigating fluid is quite free, and that therefore no tension is set up within the abscess cavity. The treatment of these cases by aspiration alone is quite useless. Cases of success by this means are, no doubt, on record, but they are so exceptional that no expectation of cure need be entertained. The preliminary aspiration for diagnostic purposes is absolutely harmless; if no pus is reached no ill-effects follow it, and if some blood be removed in the process of aspiration relief to pain and general improvement is almost certain to result. Every effort should be made to keep the discharge aseptic, taking the usual steps to this end. Pads of iodoform gauze, covered thickly with sublimate wool, form an excellent dressing, which should be renewed before the discharge comes through. In no case of abscess of the liver operated on have we failed to find firm adhesion between the liver and the parietes; suturing of the opening in the liver to the edges of the wound has therefore never been required, nor, in my opinion, is it likely that sutures inserted for this purpose can do otherwise than cut their way out of such soft tissue as the liver is composed of.

Forcible extension and flexion.

Forcible extension and flexion under an anæsthetic was done in two cases of ankylosis, one on the knee and one on the elbow joint. The knee case had suffered from acute synovitis, which left considerable fibrous ankylosis, restricting the movements of the joint considerably, and the operation resulted in great improvement in this respect. The elbow case was one which at first had in a marked degree the appearances of tuberculous disease, but long-continued treatment by rest on a splint reduced the swelling and caused the pain to disappear, fibrous ankylosis taking place at angle considerably greater than a right angle. As the limb was very useless in this position chloroform was administered, and the forearm moved to a right angle with the humerus. The joint did not again ankylose in its new position, but, on the contrary, a good deal of the normal movement of the joint was regained before the man was discharged from hospital.

Excision of the elbow.

Excision of the elbow was performed on a man of the Coldstream Guards, who was sent from London for change of air and suffering from secondary syphilis, in whom disease of the right elbow and left wrist, more probably of a tuberculous nature, had occurred. On arrival at Netley in July, 1893, he was very weak and emaciated; abscesses had formed about the elbow and wrist joints, leaving sinuses leading down to bare bone; the elbow was slightly flexed. Under treatment on splints and the use of tonics, cod liver oil, good diet, &c., his general condition greatly improved, but discharge from both joints continued profuse. As it was evident that the joint was not likely to improve, the elbow was excised on 31st October, through a single incision about 5 inches long on the back of the joint. Extensive bone disease was found, and all the articulating surfaces of all the bones were removed. Passive motion was commenced about three weeks after the operation, and the result is now extremely good, both as regards movement of the joint and usefulness of the limb. The left wrist has yet to be operated on.

Wiring the fragments of a fractured patella.

One case of fractured patella was operated on by wiring the fragments together. The injury had taken place nine months previous to the time of the man's arrival at Netley, and the result, as regards separation of the fragments, was fairly good to have been arrived at by the ordinary means of treatment by fixed apparatus. The separation was only to the extent of an inch, but the leg was almost useless to the man in walking. The probabilities of the operation as regards result were fully explained to him, and he determined to have it performed. A 4-inch incision was made over the front of the joint, the fragments refreshed by removing thin slices of bone, and brought into actual contact by silver wire, and the joint flushed out with 1–2000 perchloride solution. Firm adhesions, which existed between the front of the condyles of the femur and the upper fragment, had to be separated by the knife; no drain was used, and the incision was closed by a continuous horsehair suture. The dressing consisted of iodoform powder, iodoform gauze, and alembroth wool. The wound healed completely under one dressing, and the progress of the case was satisfactory in every way. The man regained perfect control over the limb in walking, but could not flex the joint to quite a right angle, and it was not thought advisable to forcibly flex it, lest the union might give way, and as the man was quite satisfied with the result.

Opening the mastoid cells.

Two patients suffering from disease of the middle ear, extending to the mastoid cells, were operated on, one of them requiring operation twice in consequence of healing having been allowed to take place too soon by the removal of the drainage tube. In both patients discharge from the external meatus had continued for years, and after arrival at Netley the symptoms of extension of the inflammatory processes to the mastoid cells became very evident. The temperature became high, paroxysms of severe pain in the ear and side of the head occurred, and redness, œdema, and tenderness over the mastoid process supervened. The operations were performed by turning up a semi-circular flap of skin on the mastoid process, and breaking into the cells by means of a small gouge, so as to make a free communication into the bony meatus; a drainage tube was then passed in through the external meatus and out through the opening in the mastoid process, and the wound closed, except at the point where the drain came out. The pain ceased immediately, and the after-treatment consisted in free drainage and irrigation twice a day for many months. In one case the tube was removed too early, and all the symptoms returned, the operation having to be performed again. One man left hospital quite well, and the other, the one who required the second operation, is still under treatment; but he is now nearly quite well.

Litholopaxy.

Two patients were operated on for vesical calculus, one by the supra-pubic method, which will be referred to later on, and one by litholopaxy. The man on whom the latter operation was done had been suffering from bladder trouble since November 1889, and had had a calculus weighing ʒiij, removed at Malta by lithotrity in November 1892. In February 1893 he was invalided home from Malta for debility, and some months later, while under treatment here for ague and debility, signs of vesical calculus again began to show themselves. On sounding the bladder a small stone was discovered, and the operation was performed in August. A Thompson's aspirator and a No. 14 Bigelow's evacuator were used, the fluid injected being warm boracic lotion. An internal urethrotomy had first to be performed in order to effect the passage of the lithotrite and evacuator, in consequence of the existence of a traumatic stricture about an inch in front of the scrotum, due to the extraction at that point of a fragment which became impacted after the previous operation at Malta. The lithotrite was introduced five times, and the stone crushed into fragments small enough to pass the No. 14 evacuator. No fragment could be felt by the sound at the termination of the operation, and no blood, except a few drops from the internal urethrotomy, was seen. The man's recovery was uninterrupted and rapid, except that the cicatrix of the former external urethrotomy slightly broke down, giving rise to a small urinary fistula; this closed in about a month, and the man rejoined his regiment.

Loose body knee joint

A patient who had been invalided from South Africa an account of frequent attacks of pain and swelling of the knee joint was operated on for loose body in the joint. The patient could himself always bring the loose body to the outside of the joint, and did so before commencing to take the anæsthetic; it was then held in this position until he was under chloroform. An incision about 1½ inches long was made over it, the capsule of the joint was opened, and the body slipped out. The edges of the incision in the capsule were brought together with two sutures of fine catgut and the skin wound by a continuous horse-hair suture; iodoform, iodoform gauze. and alembroth wool were applied and the leg placed on a McIntyre's splint. The body, or section, proved to be a portion of cancellous bone covered with a layer of cartilage, probably a piece of one of the condyles of the femur broken off by a strain or injury. It was circular in shape, ¾ in. in diameter, and ½ in. in thickness.

Differences of opinion as to the possibility of portions of the articular cartilage of a joint being chipped off and of their forming these single loose bodies so often found in the knee are held by different surgeons.

Professor Humphry, amongst others, is strongly against this theory of their origin, *vide* British Medical Journal of 1888, page 613. Mr. Howard Marsh has written an interesting paper in the same volume of the Journal, at page 787, upholding the view referred to, and giving cases in point. The loose body extracted in our case was a typical specimen of one produced by chipping off the articular surface of one of the bones forming the joint. A moment's examination showed it, on section, to be composed of cancellous bone covered by a layer of cartilage. I sent one half of it to Mr. Howard Marsh, who, in reply, stated that it was "one of the best specimens" in this connection which he had seen.

Extensive necrosis of frontal bone.

Sergeant J. O. B—— was invalided from India for secondary syphilis, and arrived at Netley in November 1892. A gumma formed in connection with the periosteum at about the centre of the frontal bone and suppurated. From this there resulted a large ulcer covering about two thirds of the area of the frontal bone, which remained open for many months. Some dead bone was removed by operation from the neighbourhood of the left angular process in April 1893, but no improvement took place in the condition of the ulcer. The frontal bone became bare of periosteum, the bare portion being circular in shape and of about 2½ inches in diameter. The edges of this patch of bone gradually became eroded so as to completely separate the necrosed tissue from the healthy bone around, but for months the former showed but little sign of loosening; it was firmly adherent by its under surface. No efforts were made to remove the sequestrum, but eventually it slowly became loose, and, when quite free of attachment, it was lifted off, leaving the parts beneath covered with strong cicatricial tissue, which some time later appeared to be largely formed of new bone. The sequestrum, the outer surface of which is nearly black in colour, measures nearly 2¼ inches in diameter, and is circular in shape.

Exploration of vesico-intestinal fistula.

The history of this case was somewhat peculiar. In May, 1892, No. 3,479, Private P. M——, Royal Dublin Fusiliers, was admitted to hospital suffering from inflammation of the inguinal glands, on the left side. Shortly after admission to hospital an abscess formed in the left groin, this was opened in the usual manner, and 24 hours afterwards fæces were noticed in the wound, and some pus was passed in the motions. Two days later there were fæces in the urine. The opening in the inguinal region soon diminished in size, and the fæces disappeared from the discharge from the abscess cavity, and less urine was also passed in this manner.

On admission to Netley, March 4th, 1893, the following note was made:—" He still passes pus in his motions, and sometimes fæces appear in the " dressings and in his urine, some urine also passes by the wound." He was extremely emaciated, there was a good deal of abdominal tenderness, and a hectic temperature was persistent. A probe passed into the mouth of the sinus, which was situated just above Poupart's ligament, at the junction of the outer and middle thirds, led directly into the pelvis in the direction of the left sacro-iliac synchondrosis, and passed in this direction for about four inches. Under chloroform the mouth of the sinus was laid open and the parts fully explored by the finger; no dead bone or other local condition could be detected to account for the formation of the abscess. The parts were well washed out and a large drainage tube inserted. For months no improvement took place; ultimately the case underwent a spontaneous cure, the abscess cavity dried up; no passage of fæces took place into the bladder, nor of urine by the wound. The man gained flesh most rapidly, and left the hospital completely recovered.

Wiring inferior maxilla.

This case was an extremely interesting one, demonstrating the great amount of injury which can be sustained and recovered from, if no vital spot is implicated.

Private R. T——, a private in the Medical Staff Corps, was employed as an orderly in the Surgical Division of the Royal Victoria Hospital, Netley. He was in the habit of taking a serious case out in the grounds, on a litter. The lift was used to convey the case from the surgical division to the ground-floor and up again; a trained orderly acted as lift man. Private R. T. was going to take his case down to the grounds, but finding that the lift was on the first floor, and the lift man away, he thought he would facilitate matters by fetching the lift up. He got into the lift and set it in motion, but remembered that he had not shut the door of the lift shaft, he leant out of the lift to do so, overbalanced himself, and before he could recover himself was crushed by some of the framework of the shaft.

He was found lying in a pool of blood on the first floor. He was absolutely unconscious and suffering from severe shock. On examination the following injuries were observed:—

There was a compound comminuted fracture of the inferior maxilla, the four lower incisor teeth with their alveolæ process were hanging down in a flap which had been torn off the lower jaw.

There was a comminuted fracture of the superior maxilla on the left side, and also of the left malar bone. The soft parts of the face were extensively lacerated, a large flap had been torn off the bone, exposing the ramus of the lower jaw on the left side, and also the condyle of the jaw. The left ear was very much lacerated and hanging only by a tag of skin. The parts below the tongue were much lacerated, a large piece of the hard palate was pressed down into the cavity of the mouth. Both bones of the right forearm were fractured at the junction of their middle and lower thirds.

After removing some of the teeth and alveolus, the body of the inferior maxilla was wired on the left side about one and a half inches from the symphysis. Parts of the malar bone and superior maxilla required removal, and it was found impossible to save the left ear, which was only hanging by a tag of skin.

The various flaps of the soft parts were fixed by silver sutures in position, and a continuous suture of horse hair used to obtain close approximation of the parts. For two days the breathing was very difficult and the tongue had a tendency to fall back on the glottis, and this organ had to be held forward by a piece of silk passed through the tongue. The patient was unconscious and his condition critical. He gradually regained consciousness. The fractured bones united well, and the silver wire which secured the lower jaw was removed about two months after the injury. Various pieces of bone from the inferior maxilla came away at times, and gradually the soft parts cicatrised well. With the exception of loss of most of the teeth, the left ear, and impaired sensation over the chin and the left side of the lower lip, there is little now to show the severe injury the man suffered from.

Radical cure of hernia.

Three operations for the radical cure of hernia were performed during the present year; the herniæ were all of the inguinal variety. The operation selected in each case was that of twisting the sac, and bringing the conjoined tendon and Poupart's ligament together with silkworm gut sutures. The technique of this operation was fully described in last year's report. Very careful attention to the aseptic condition of the hands of the operator, the skin of the patient, and the instruments, &c. used should be employed. In only one case was there any trouble with the operation wound; in this case a buried suture of silkworm gut set up irritation, which developed into a small abscess some weeks after the wound had apparently healed soundly; a sinus formed, which ultimately healed well, when the source of local irritation was removed. A point which is worthy of remark is the collapse which is liable to occur at the moment of twisting the sac, unless the patient is thoroughly under the influence of the anæsthetic. This condition is analogous to that produced by division of the cord in castration, and especial care should be observed to get the patient thoroughly well under the influence of the anæsthetic before the sac is twisted. The value of this operation in military life has yet to be determined; our statistics are too few at present to enable us to state with certainity whether the result of the operation is sufficiently good and permanent to justify its extended use. Our own ideas are that if the operation is successful, and no severe strain is thrown on the parts for a period of six months, that the cure is permanent. In cases in which the operation is successful no truss is subsequently required; the application of one is indeed harmful. In determining the chance of sucessful issue the age of the patient, the size of the protrusion, and the length of time the hernia has existed must be taken into account, the success of the operation is in inverse ratio to these conditions.

Wiring humerus.

No. 3,198, Private B. B.——, East Yorkshire Regiment, aged 21. On January 2nd, 1893, when returning from the canteen, under the influence of drink, he fell into an open drain and fractured the left humerus at the junction of the middle and lower thirds. The fracture was put up with four short splints. At the end of five weeks it was found that no attempt at union had occurred; it was then placed on a rectangular splint and kept quiet for another month, but still no union took place. The ends of the bone were rubbed together, but no callus was thrown out, and only fibrous union took place. The patient's family history was good, and there was nothing in his previous history to account for this condition.

He arrived at Netley in August, 1893. The patient's general health was good, and on August 20th the ends of the bone were freely exposed by an incision of six inches in length on the outer side of the arm. There was much comminution of the fragments, and the fractured ends of the bone were splintered and distorted. All the loose fragments were removed, and after section of both ends of the bone a stout silver wire was passed through them to keep the two fragments in close apposition. The arm was secured in an immovable apparatus and slung. The operation wound healed at once, but at the end of two months no bony union had taken place. It was then decided to again resect the fragments, and on the 12th of December the ends of the bone were again freely exposed. The silver wire used in the former operation was divided and removed, and a free section of each fragment made; these were again brought into close connection, and absolute immobility secured. Again the operation wound healed at once, but at the expiration of some weeks not the slighest attempt at union had occurred. No callus had been thrown out, and only ligamentous union had again taken place.

It was difficult to explain the want of union in this case. The man was apparently a perfectly healthy subject, with no constitutional taint, perfect immobility of the fractured ends had been assured, the skin wound healed at once, and everything seemed to point to a successful issue. On the last occasion it was noticed that the lower fragment of the bone was very light, porous, and atrophic, and it seems probable that the want of union must be attributed to the fracture occurring through the channel of the nutritive artery of the bone, and to the consequent atrophy of the lower fragment.

Incision and drainage of chronic abscess (for bone disease).

Seven operations were undertaken for chronic abscess connected with bone disease. The points principally arrived at in the treatment of this condition were as follows:—The free opening of the abscess cavity, exploration of surrounding parts with the view of finding out if these were dependent on the presence of dead bone, the removal of such diseased bone if practicable, the thorough removal of the abscess wall by scraping, drainage, at the most dependent part if required, and if suppuration were unavoidable the shortening of the track by which the discharge passed if possible. In this connection it is useful to recall the recent advances in the treatment of psoas abscess. The most satisfactory results have followed the opening of the abscess, in one or more places to allow of the escape of the pus, and also of the manipulation required to completely remove the abscess wall by the spoon, a most important point. The removal of the carious bone, and the complete closure after free irrigation by sutures of the openings into the abscess cavity is then undertaken with the expectation that recovery will take place. In order, however, to arrive at this brilliant result it is necessary to completely remove the local cause of the disease. A very instructive case came under observation illustrating this point during the present year. No. 3,217, Private G. C——, 2nd Battalion, Middlesex Regiment, was invalided home, suffering from debility and pain in the back. The history is worthy of attention. This man, who was serving as a cavalry soldier, received a fall and was crushed by his horse. He did not feel much the worse for some days, but then began to suffer pain in the middle of the back; he was admitted to hospital several times for this condition, and ultimately riding distressed him so much that he obtained a transfer to an Infantry Regiment. A year after the original accident a swelling appeared on the inner side of the thigh, the swelling was aspirated, and he was invalided home. By the time he had arrived at Netley a large collection of matter had formed on the outer side of the right hip-joint. This burst on the day of his admission to the Royal Victoria Hospital. By this time he had lost all pain in the back, and no painful spot could be detected. The abscess cavity was freely opened in two places, carefully and thoroughly scraped, and drained at its most dependent point, the other openings being closen by sutures. The most careful examination failed to detect any sinus connected with dead bone, either of hip or spine. For some weeks the abscess seemed to have all but closed, only a very small sinus existed, and the discharge was practically *nil.* He then contracted erysipelas, starting from the wound, profuse suppuration became again established, albumen appeared in the urine, and the case went from bad to worse, the patient ultimately died from exhaustion. The post-mortem demonstrated very extensive disease of the bodies of the dorsal vertebræ.

Iridectomy.

Only one operation was performed this year. The case was one of syphilitic iritis, with extensive posterior synechiæ. On the arrival of the patient at Netley, he had already suffered on eight occasions from attacks of iritis, in the left eye. The right eye was implicated, but not to the same extent. An upward iridectomy was performed in the left eye, to place the iris at rest, and to prevent the continuance of the chronic inflammatory state of this structure. Local anæsthesia was produced by a solution of cocaine. No complication occurred during the operation, and the wound healed without any trouble. While under observation no further attacks of iritis developed. The man was ultimately discharged from the service.

Supra pubic lithotomy.

Private V. D. V——, No. 2,708, 2nd Battalion, Royal Sussex Regiment. In September, 1890, while in hospital suffering from ague, the patient passed a small stone "per urethram." At short intervals after this he passed other stones, amounting in all to seven; their passage caused no trouble or inconvenience. In December, 1891, he had a good deal of pain in the bladder, and other symptoms of vesical calculus, including retention of urine, and ultimately in that month he passed another stone, and all the pain for the time disappeared. In August 1892 he was admitted to hospital again, with cystitis, the presence of another stone was diagnosed, he was invalided to England, and admitted to Netley in March 1893. On sounding, a stone was detected, and a lithotrite was passed with a view of seizing and measuring the stone. As a result of this examination he had a sharp attack of cystitis, accompanied by acute inflammation of the prostrate gland. Retention of urine was present occasionally at this time, but any attempt at catherisation was extremely painful and had to be abandoned. Litholopaxy was clearly out of the question, and the choice of operation for removal of the calculus lay between lateral and supra-pubic lithotomy. The latter was chosen as the preferable operation. No albumen was present in his urine; the amount of urea excreted was somewhat diminished. A well-marked systolic murmur at the base of the heart existed. Supra-pubic lithotomy was performed on May 5th. By means of a catheter, attached to an india-rubber tube with a funnel, 13 ounces of warm boracic lotion were thrown into the bladder. The rectal bag was used, and 8 ozs. of the same solution injected. The bladder then presented to the extent of three inches above the pubes. On exposing the wall of the bladder, two threads were passed through the wall to steady it, and an incision ¾ of an inch long was made into the bladder. Through this incision three stones, weighing 54, 51, and 46 grains respectively, were extracted. The stones were composed of phosphate of lime. A large drainage tube was inserted into the bladder. This was removed on the fourth day, and a soft catheter inserted through the urethra. The operation wound healed firmly in three weeks, and the man made a good recovery. He was discharged to duty.

Division of fasciæ (for Dupuytren's contraction).

No. 2,299, Private T. R——, 2nd Battalion, West Riding Regiment, aged 30, was invalided from Barbadoes; and admitted to the Royal Victoria Hospital, Netley, on June 16th, 1893, suffering from Dupuytren's contraction of the third and fourth fingers of the right hand.

About two-and-a-half years before the date of his invaliding he fell, while carrying his rifle, and bruised the palm of his right hand on the back sight of his rifle. Since this accident he noticed gradual contraction of his little and ring fingers of the right hand. On his admission to Netley the little finger of the right hand was drawn down to nearly a right angle with the palm, the ring finger not quite so far. The palmæ fascia on the ulnar side of the right hand was thickened and contracted, and the skin deeply wrinkled and indurated. Any attempt at extension of the fingers involved rendered the band of fascia very tense. Under the local influence of cocaine (10 per cent. sol.) the palmæ fascia was divided in six places, and also the prolongations of this fascia on each side of the metacarpo-phalangeal joint. The operation was performed subcutaneously by a narrow-bladed tenotome. Small rolls of lint were placed on each point of entrance of the knife and pressure applied by strips cf plaster. After the operation the fingers were easily straightened to their full extent, and were then bandaged to a back splint made of metal, which reached from the wrist to just beyond the tips of the fingers, and kept in this position for a week. After this the splint was only kept on for a few hours during the day, and at night a special apparatus made of highly-tempered steel was applied; this splint was fixed round the wrist, and maintained full extension of the little and ring fingers. The case was a very successful one; the patient was kept under observation some weeks, but no tendency to relapse was noticed, and the man was then discharged to duty.

Restoration of nose.

No. 2,556, Private J. N——, 1st Battalion, Royal Highlanders, aged 31, contracted syphilis in 1884, the primary chancre was followed almost immediately by sore throat and rash. From 1885 to 1891 he was free from all symptoms of syphilis. In February, 1891, he was admitted to hospital in Gibraltar suffering from gumma on his cheek; this broke down, the ulceration spread rapidly and destroyed not only the soft tissues of the nose, but involved the bones, and a good deal of necrosed bone came away. He was admitted to Netley, in October, 1891, and is now a free patient, having been discharged the service for some months.

The condition before operation was as follows :—All the soft parts and bridge and septum of nose had disappeared, leaving a chasm extending backwards to the pharynx. The loss of the skin was more marked on the right side, extending slightly on to the cheek. On the left side a small portion of the ala was left. The whole cavity was bounded by dense fibrous tissue, cicatricial in character. There was loss of the soft palate, the uvula had disappeared, and the velum was indurated and bound down to the pharynx. As the syphilitic process was quite quiescent, an operation was undertaken to form a new nose. The Indian operation was selected. The edges of the tissue bounding the cavity were refreshed, and the upper lip freed from the lower edge of the cavity. A flap 2½ inches broad at the base and 4 inches long was cut from the forehead, above the right eyebrow, and twisted down into its position, no periosteum was taken in this flap. The flap was accurately fixed to the freshened edges of the cavity by continuous horse-hair sutures. The wound on the forehead was closed as much as possible by hair-lip pins. Three days after the operation the slightest touch on the nose could be felt, and the flap united perfectly. The artificial nose soon began, in spite of every endeavour, to fall in to some extent, as there was no bridge to rest it on. Seven weeks after the first operation the neck of the flap was divided and some of the thickened subcutaneous tissue removed, and later the edges of the nose which had puckered somewhat, were freed subcutaneously by a tenotome needle. Considerable shrinking of the flap took place, but on the whole the improvement in the man's appearance was great.

Division of fascia and tendon.

No. 3,662, Private S. S——, 1st Battalion, Somersetshire Light Infantry, aged 20, was invalided from Gibraltar, and admitted to Netley on May 18th, 1893. He had only completed six months' service. He stated that about two years before enlistment the second toe of the right foot was chafed by his boot, and as a result a corn formed over the first phalangeal joint, he also noticed at this time that the toe was somewhat bent. The toe became more and more contracted until a regular condition of hammer toe became developed. With the exception of the big toe all the toes became more or less contracted. He found that he was quite unable to march and had to go into hospital. He was invalided home, and admitted to Netley May 18th, 1893. His condition on admission was as follows:—The big toe of the right foot was normal, all the other toes were in a state of extreme flexion. The second toe could not be straightened, all the other toes could, however, be gradually extended by manipulation to their proper extent.

The condition of hammer-toe was very well marked; a corn had formed over the first phalangeal joint, and also at the distal end of the toe, the nail was partly worn away. There was a tendency in the left foot to a similar condition.

Under the local influence of cocaine the lateral ligaments of the first phalangeal joint of the second toe of the right foot were divided subcutaneously; the toe could not yet, however, be brought into the right position; the fibrous tissues and tendon opposite the joint on the plantar aspect were then freely divided subcutaneously, and the toe could then be extended to its proper extent. The toe was at once placed on a padded metal splint, which extended from the heel to beyond the toe, and secured firmly. This splint was changed on the fourth day for a specially prepared foot-piece made of wood, to which the foot and toes were secured by soft straps, and the patient was allowed up. The operation was successful and the man returned to duty. It is doubtful, however, whether this man will be able to continue to serve, as his left foot had become, to a slight degree, similarly affected.

APPENDIX No. III.

REPORT ON THE PROCEEDINGS OF THE SEVENTH SESSION OF THE FRENCH CONGRESS OF SURGERY, APRIL 1893.

By Brigade-Surgeon Lieut.-Colonel W. F. Stevenson, A.M.S., Professor of Military Surgery, Army Medical School, Netley.

The Seventh Session of the French Congress of Surgery was held at Paris during the first week in April 1893, and the meetings took place in the amphitheatre of the "Faculty of Medicine." All the papers read at the Congress and the discussions on them were in French. A large number of members attended the meeting. M. Lannelongue had been appointed President for the year, M. Tillaux as Vice-President, and M. Pozzi acted, as hitherto, as general secretary.

The two subjects chosen at the termination of the previous Session for discussion at this one were "Fibrous Tumours of the Uterus" and The "Surgical Treatment of Tuberculous Disease of the Foot"; but, besides these, papers on a number of other matters of surgical interest were read and discussed. The programme of the work of the session informed the members that the time for the reading of papers would be from 2 p.m. to 6 p.m.; but the number of these was found to be so large that it was necessary to hold morning *séances* for this purpose, from 9 a.m. to 12 noon, on five days out of the six during which the Congress sat. Arrangements had also been made by the officers of the Congress in order to facilitate the members visiting the different hospitals and institutions of medical and surgical interest in Paris. This part of the programme was usually carried out at 9 a.m., the hour at which the surgeons attended at the hospital and performed operations, the session commenced on Monday, 3rd April, and ended on Saturday, 8th April.

Certain papers, to some of which I shall refer later on, were taken at a morning sitting on Monday, April 3rd, and at 2 p.m., the Congress was officially opened by an eloquent address from M. Lannelongue, the President, in which, having welcomed "his colleagues from the provinces and his friends "from foreign countries, who had come to enhance, by their presence, the "*éclat* of our Congress," and having expressed his grief for the deaths during the year of MM. Le Prévost, of Havre, and Horteloup, of Paris, he spoke of the steady progress being made in the science to which surgeons devote their efforts. "There is no branch of human knowledge," said M. Lannelongue, "which, in the space of a few years, has been more completely "revolutionised by discoveries, as amazing as they are useful, than ours. "Almost in a moment surgery received an enlightenment which so cleared "the horizon that we all can recognise its limits and, for the first time, see "its possibilities. It also fixed the conditions and laws which henceforth "shall regulate its advance and unite the security of a science with the pro- "mises of an art which, notwithstanding its nobility, is not without its "drawbacks. And what a revolution in our manners and in our customs. "Before these last few years there existed in France, and, I believe, to a less "extent elsewhere, a state of things most deplorable." He then proceeded to describe how unsuccessful and how necessarily timid surgeons had been in former years, and how, now-a-days, all this had been changed by modifications in surgical methods and by improvements in surgical procedures and dressings; how surgeons could and did in these days undertake, and carry out successfully, operations of the greatest importance on all parts of the human body, and how wounds from the slightest to the greatest are treated and carried to the desired issue; that the improvement in surgery was not confined to Europe, but, on the contrary, that it was well marked in newer countries; that America was well in the line of advance, and that, no doubt, other continents, Asia and even Africa, would one day occupy their proper places in the forward march of surgical science. He recalled the following words of the preface to Boyer's work on Surgery, published at the beginning of 1822:—"Surgery has made in our days the greatest progress, and seems to " have reached as far as possible the highest degree of perfection." "How " strange," said M. Lannelongue, " is this estimate of a progress of which " no one can, even now, foretell the limits." Towards the end of his speech he referred to the gentleman who sat on his right: " When we ourselves " shall have long passed away, posterity will remember a time, memorable " amongst all times, which will recall to them the man who has added greatness to his country, him to whom our science owes its renovation, and to " whom a part of the human race owes its existence. Immortality has shone " for Pasteur from the day of his discoveries; universal gratitude pays him " respect on his 76th birthday;" a reference which was received with great applause.

M. Pozzi then announced that Sir William MacCormac, M.M. Thiriar, Desguins, Reverdin, Zancorol, myself, and some others of the provincial and foreign surgeons had been elected honorary Presidents of the seventh session, and the work of the Congress began.

Sir William MacCormac on old dislocations of the shoulder.

The first paper read after the President's address was one by Sir William MacCormack on " The treatment of old dislocations of the shoulder joint by " incision, and the re-adjustment of the head of the humerus in the glenoid " cavity." Sir William addressed the Congress in French, and said that he had occasion lately to operate in a case of old dislocation of the shoulder with fracture of the upper end of the humerus. It occurred in a man of 40 years of age who had fallen from a horse and in whom had been made a diagnosis of fracture of the humerus and an apparatus applied. Fifteen days later the luxation had been recognised, and reduction attempted, but only with the result of breaking down the recent callus, and the arm was again put up in a fixed apparatus. " When I saw the patient for the first time the accident had " existed for more than three months. I made an incision in the long axis " of the limb, just outside the coracoid process, crossing the head of the " humerus obliquely and corresponding to the line between the deltoid and " great pectoral muscles. I found the head of the bone at the bottom of the " wound, and freed it completely by detaching the capsule, the periosteum, " and the muscles from the tuberosities. I was then able to ascertain that the " greater tuberosity had been fractured. On the other hand, the anterior " third of the glenoid cavity was also detached, and the posterior two thirds " were filled with dense connective tissue and the remains of the capsule. " I removed all the tissues, and the reduction was accomplished without any " very great difficulty. The arm was then fixed in such a manner as kept " the elbow advanced. The wound suppurated freely, and three weeks later " no improvement had occurred, accordingly, I reopened the wound, made " the head of the humerus project and excised it at the situation of the " anatomical neck. The results were excellent; the pain of which the " patient usually complained previously completely disappeared, and the improvement increased daily in a marked manner. When, therefore, in a " recent case of dislocation of the shoulder, complicated by fracture of the " neck of the humerus, we cannot succeed in reduction, should we wait for " consolidation of the fracture and then attempt reduction, or should we " immediately proceed to replace the head of the bone by operation? Or, " again, would it be preferable to imitate Helferich, and fix the fracture by " means of a peg? Lately Messrs. Croft and Clutton have seen at St. " Thomas' Hospital two cases of fracture of the neck of the humerus with " dislocation, and practised on them immediate excision of the head of the " bone, with favourable results in one case and fairly good results in the " other. To my mind immediate excision appears to be better practice than " reduction by arthrotomy, always difficult and sometimes impossible. As " regards the mechanism of the double lesion, the dislocation is the primary

" injury, and the force continuing causes the separation of the head of the " humerus."

M. Severeanu. M. Severeanu, of Bucharest, said that he had had a case of old dislocation of the humerus, and failed to reduce it under chloroform, using a force of 200 kilogrammes. The case was one of complete sub-coracoid luxation. He decided to lay the joint freely open in order to resect if he failed in reduction. He made a transverse incision over the acromion process, and sawed off its extremity; he then made a vertical incision from the end of the first one, thus obtaining ample room. Finding the articular cavity in good condition he put on traction to 170 kilogrammes, but the head of the bone did not move; then, with a gouge, he levered it into the glenoid cavity without much difficulty. He washed out the joint, sutured the capsule, and closed the wound. In a month the patient could put his hand to his mouth.

M. Pollosson. M. Pollosson, of Lyons, gave a *résumé* of five unpublished cases of old dislocation of the shoulder treated by arthrotomy. The oldest case in question was one of sub-coracoid luxation, dating six months back. He said: "I did " not even dream of attempting to apply traction; from the first I determined " to practise a cutting operation. I employed Ollier's incision, between the " pectoral and deltoid muscles. When the capsule was incised I explored the " old articular cavity with my finger, and applied some traction; I then saw " the head of the bone gradually approach the glenoid cavity, and finally " enter it completely. I closed the wound without drainage, and union by " first intention took place. Three weeks later the patient had regained some " freedom of motion, and when he left hospital he had recovered the movements " of his joint almost completely." His second case was one of dislocation of the left shoulder, dating back nine weeks, in a man of 52 years of age. He performed the same operation, but was obliged to free the head of the bone of attachments at its posterior part, when reduction immediately followed. The third observation had been communicated to him by his brother; the dislocation had existed six weeks, and the operation, following the same procedure, gave excellent results. M. Pollosson had experience of two more recent cases, in which the contraction of the soft parts about the joint, and the "turning back" (rebroussement) of a piece of lacerated capsule opposed the reduction. In one of these cases, in a man of 64 years, in whom the dislocation had existed for three weeks, and in which there had been a considerable effusion of blood, he made a transverse incision through the anterior part of the deltoid, as well as the vertical incision, and replaced the bone, but he did not state with what result as regards utility of limb. M. Pollosson concluded by saying: " We all know the kind of accidents which ineffective attempts at reduction " of old dislocations by traction may produce; and, at Lyons, I myself know " of one case in which the limb was torn away, and two in which death " followed similar efforts. I think, therefore, that we need not hesitate to " take operative measures under similar circumstances, in order to attempt " reduction, and, failing this, we should resect the head of the humerus."

Tuberculosis of the foot. The surgical treatment of tuberculous disease of the foot. This was one of the two set questions for discussion at the Congress, and the subject was opened by a paper by M. Ollier, of Lyons, on excision of the astragalus in cases of tibio-tarsal osteo-arthritis. He said: "In a question so vast as is " that of tuberculous disease of the foot, I shall devote my remarks altogether " to tuberculous disease of the tarsus; and, moreover, I shall limit myself to " one portion of the subject, desiring, as I do, to insist especially on the advantages to be gained by excision of the astragalus. Up to 1878, following the " ideas which were then held, when I performed a tibio-tarsal resection, I " removed first the malleolus, then I scraped or removed the astragalus, " following up the lesions which I discovered. But the results showed me " that this method of procedure was faulty, and it then occurred to me to " begin by ablation of the astragalus, which would give me a large opening " permitting me to recognise the extent of the lesions with ease." M. Ollier commenced to apply this method in 1878, but only in 1881–82 did he quite cease to operate otherwise. Since that time he has done 86 astragalectomies, and he is convinced that, in practising this operation with certain precautions, the results have become more and more satisfactory. Amongst the reasons which made him adopt this procedure, he especially points out the frequency with which, in these cases, the astragalus is the point of onset of tuberculosis of the foot. Of the 86 cases on which he has operated at present, the disease commenced in the astragalus in 29, and in the synovial membranes of the joint in 22. In a certain number of cases the tibia had been the site of the original lesion, but in these also it is preferable to begin by the removal of the astragalus, because it is the only means by which an attempt can be made to preserve the malleoli, while scraping away all the parts attacked by the tuberculous process. It was in this way, in a case which commenced in 1883, and in which there had been a centre of tuberculous infection in the tibia which had secondarily affected the tibio-tarsal joint, that he had been able, having removed the astragalus, to clear away all the diseased tissues, and to preserve for his patient a limb of which he had had perfect use for the last six years. The reasons here indicated were those which made M. Ollier insist on astragalectomy being the essential and initial point in the operation. He had published his first cases in 1886 (*see* "Semaine Médicale," p. 348); to those he has added, four years ago, his later results ("Semaine Médicale," 1889, p. 163); and now these cases have acquired, on account of the time which has elapsed, a greater interest. He pointed out how desirable it is that the operation should be performed deliberately, and without hurry, if one wishes to make certain of removing all the diseased tissue, and of placing the patient in the best condition for recovery. He especially drew attention to the fact that failure often results from the surgeon overlooking a fragment of bone which often becomes detached from the posterior surface of the astragalus, and which may, perhaps, become a focus of infection from which a recurrence may originate. Having removed diseased tissue as far as possible, the destruction of the tuberculous infection should be completed by the use of the cautery at a red heat, which destroys that which it may be impossible to see, and which has thus escaped removal. "It may not be quite correct," M. Ollier remarked, " to say that this operation should not be undertaken after from 25 to 30 " years of age; for all depends on the physiological power of resistance of " the patient, on his general condition, and of the state of his internal organs. " But it is certain that, in cases of secondary lesion or general infection, " amputation must be performed as high up as possible. As a general rule, " before deciding on operation, it is necessary to keep the patient under " observation for some time; and it often happens that, while so acting, we " may discover a means of doing a conservative operation in those cases in " which at first it appeared that amputation was the only possible procedure. " The after results of this operation, performed as just now described, are " often surprising when the patients are seen again after the lapse of sufficient " time. A new joint has been established, which is movable, and some " shortening, which can easily be remedied, is its only drawback. In children " also astragalectomy has given excellent results; but it might be thought " that in these the shortening might be too great on account of arrest of " development, but it is not so; shortening in children is no more marked " than it is in patients of from 20 to 25 years of age. In cases where more " than astragalectomy is required, a complete disarticulation should be per- " formed, removing all diseased structures, and preserving the periosteum of " the os-calcis, as in cases of tuberculosis of the heel with multiple sinuses; " because in my opinion the heel should always be preserved, no matter how " affected it may be." A discussion followed the reading of M. Ollier's paper, in which his views were thoroughly upheld by those taking part in it.

M. Le Dentu.

Use of decalcified bone in the treatment of tuberculous disease of the foot. M. Le Dentu, of Paris, read a paper on this subject, pointing out that among the conservative methods which have been proposed in the treatment of tuberculosis of the foot, there is one which hitherto has been but little used, but in favour of which he could bring forward some most encouraging examples; he referred to the method by implantation of decalcified bone. He related a case of tuberculosis of the lower extremity of the tibia of at least six years' standing, with persistent sinuses, and in which he had implanted, in the lower end of the tibia, a piece of decalcified calf's bone 2½ inches long; new bone was produced, less in length but strong, and his patient was able to walk well after three months. Another case mentioned by him occurred in a girl of 21 years of age, suffering from very extensive disease of the os-calcis, astragalus, and of many other bones of the tarsus, and for whom amputation was under consideration. In this case extirpation of the os-calcis, astragalus, and scaphoid was performed; the posterior surfaces of the cuboid and cuneiform bones were scraped, and two large pieces of decalcified bone were placed on a level with the anterior portion of the tarsus, and another large fragment, of many centimetres in length, in the normal situation of the os-calcis, in order to attempt to reform a true heel. The sinuses were scraped out, and the wound closed without drainage. After four months the wound had healed completely, and the patient could walk with the aid of a fixed plaster apparatus. The final result is very favourable. A slight limited suppuration was produced, not communicating with the deeper parts; but this accident was of no consequence. Now, 22 months after the operation, the foot is strong, and the functions of the new tibio-tarsal joint are satisfactorily performed.

M. Ollier.

M. Ollier said with regard to this matter that, since 1864, he had thought of maintaining the natural outlines of the periosteum in cases of bone disease, by means of foreign bodies so placed as to give support to it, but had had to give up the plan because they gave rise to profuse suppurations. With antiseptics he had again taken up the idea; but, for the cases now under consideration, tuberculous affections, he was always satisfied to pack the periosteal sheaths with iodoform gauze, in order to utilise the modifying local action of iodoform, and he had seen the entire os-calcis reproduced by this means—in young subjects, of course. In some cases, not tuberculous, he had found catgut, employed in the same manner, act well.

On the indications for the method of intervention for tuberculous disease of the tarsus.

M. Poncet.

M. Poncet opened the discussion on this subject. He pointed out that once the diagnosis of tuberculous disease of the tarsal bones was established operative treatment should be undertaken, and for still stronger reasons when the diagnosis was doubtful, in order, in these cases, to discover the character of the lesions, and to do what might be necessary for their treatment. The indications for the different modes of procedure depend, on the one hand, on the depth and extent of the lesions, and, on the other, on the age of the patients. In cases of chronic and diffuse tarsal disease, amputation, after 40 years of age, is preferable to tarsectomy; it may be equally so between 30 and 40 years, when many of the tarsal bones are affected. Between 15 and 30 years of age, on the contrary, one is seldom reduced to this extreme measure, and resections are generally indicated. Up to 15 years of age amputation should be absolutely rejected in the majority of cases.

M. Pollosson.

M. Pollosson said that he believed it was necessary, in cases of tuberculosis of the anterior tarsus, susceptible of a limited intervention, to distinguish those in which the outer bones only are attacked from those in which the inner ones alone are diseased; the conditions appear to him to be quite different. When the cuboid and its corresponding metatarsal bones only are diseased, external tarsectomy should suffice. On the contrary, when the disease is situated in the scaphoid, the three cuneiforms and their metatarsal bones, internal tarsectomy gives a bad result (orthopædically), and it is best to remove in these cases the cuboid as well. In cases of osteo-arthritis of the tibio-tarsal joint disarticulation gave him good results in two elderly patients. One was 66 years of age, and lived for three years after the operation without any return of the disease, dying of bronchitis; the other he had seen seven years later without local return of the complaint.

M. Moty.

M. Moty, of Paris, narrated two recent cases of tuberculosis of the foot, in which Lisfranc's amputation had given satisfactory results, and said that the study, anatomically and pathologically, of lesions of the bones of the foot, shows that the centres of disease in these cases are usually multiple, and probably result from the elements of infection being carried by the blood and arrested in the bone cells, as may occur in the same way and with like results apart from traumatism. With adults and old people spontaneous recovery need not be hoped for, and radical operations are best, but general treatment before and after operation is necessary to prevent secondary localisation of the disease or the lighting up of quiescent tuberculous centres.

M. Phocas.

M. Phocas, of Lille, pointed out that it is impossible to formulate rules of treatment which will be always applicable in cases of tuberculosis of the foot; but we may discuss the indications for treatment by immobilization and pressure which is often successful with children, as well as those of the cases likely to be improved by injections by the "*sclerogenic* method." The treatment by scraping and free use of the thermocautery is frequently successful in the case of very young children with osseous tuberculosis with sinuses; he had twice used this method with good result. With older children he performs resections. Astragalectomy is an excellent operation in its remote results; out of three operations he had seen recurrence take place in one a year after the operation, but the child recovered eventually. In two cases M. Phocas had practised an extensive tarsectomy, including the two posterior bones of the tarsus and the end of the tibia, and in a third all the tarsus except portions of the cuneiform bones. Three years and ten months have elapsed since the operations; the shape of the foot leaves nothing to be desired, and the result is better when compared with Waldimiroff's operation, which, he considered, was seldom indicated in children. He had amputated in only one case, one in which excision had failed, and frequent relapses were exhausting the child's general health; the case recovered. One resection of the os-calcis, and one of the first metatarsal bone with bone-grafting were successful.

M. Campenon.

M. Campenon (of Paris) said: "I have collected 13 cases of tuberclosis of "the foot in which the ankle-joint was not affected, and all these are cases in "which I have followed up the patients for two years at least, and some of "them for seven or eight years after they had been treated by different "operations according to the extent of the lesions. When one has to deal "with thickening of the soft parts only, without suppuration and sinuses, "immobilisation and pressure may suffice to ensure favourable results and "lead to absolute recovery after a time more or less prolonged. This has "occurred in three of my patients. When, on the other hand, one has to deal "with tuberculous disease of the foot, accompanied by suppuration, surgical "interference is necessary by an erasion or a partial resection; or when a whole "row of tarsal bones is affected a methodical operation, well thought out, will "be required; and lastly, when the disease has extended higher up amputation will be necessary. With all my patients, by employing methods "of intervention proportional to the extent of the disease, I have obtained "very satisfactory results."

Bone-grafting in hernia.

M. Thiriar (of Brussels) read a paper on the advantages to be gained by the use of what he called bone-grafting in cases of operation for the radical cure of hernia. A weak abdominal wall being the cause of the return of a hernia, anything which increased its strength tended towards the desired results in these cases. M. Thiriar considered that bone-grafting had this effect. The radical operation which he performed consisted in the ligature and removal of the sac and the placing of the stump within the internal ring: he then closed the inner opening of the canal by placing a decalcified bone plate within the abdominal cavity between the internal ring and the stump of the sac, and fixing it with catgut sutures. The size of the plate depended on the size of the opening. In 21 operations of this kind the cicatrix remained firm, and no relapse occurred. The bone is absorbed and replaced by strong cicatricial tissue.

M. Delorme: a substitute for Estlander's operation.

M. Delorme, of the Val-de-Grace, described an operation which he suggested as a substitute for Estlander's procedure in cases of empyema. It consists in making a wide opening into the chest wall by cutting out a flap, including the skin and ribs. On the completion of the operation, the flap, or trap door, is replaced and sutured in position. Three incisions are made representing three sides of a rectangle, two horizontal in the second and sixth interspaces, and one vertical two inches outside the edge of the sternum; the skin is dissected off. Anteriorly the ribs and intercostal muscles are completely cut across, while posteriorly, the ribs only are cut; the muscles in the second and sixth interspaces are then divided, and the flap turned outwards. M. Delorme had just tried this method in a case of tubercular abscess of the chest wall combined with a large empyema. Excision of ribs had previously been tried; but had failed. This flap operation gave complete command of the abscess cavity; the thickened abscess wall was removed by scraping and dissection, as well as some rough false membrane which extended over the pericardium and left lung. The same procedure may be carried out in the treatment of the two most important complications of perforating wounds of the chest, viz., hæmorrhage, and pneumothorax, and M. Delorme gave the history of a case of this kind in which the seat of the hæmorrhage had been reached in this way and the bleeding arrested by suture of a wound of the lung substance, and by the application of pressure forceps to other bleeding points. This operation valuable, no doubt, in suitable cases can hardly be looked upon as a substitute for Estlander's. It is essentially one intended to give room for manipulations within the chest. Whereas Estlander's was designed solely for the purpose of enabling, by excisions of portions of ribs, the otherwise comparatively rigid chest walls to contract on a closing empyema, and thus of permitting of obliteration of the cavity. In Delorme's operation, as already mentioned, the ribs are replaced (not excised), and no doubt are re-united, preventing the diminution in size of the affected side; and in this point being quite opposed to the theory of Estlander's operation. By far the greater part of the time at the Séances of the Congress was occupied by papers and discussions on the treatment of uterine fibromata, but I made no notes on the subject, as it is not one of special interest to Army surgeons.

Hôpital Bichat.

Arrangements had, as already mentioned, been made by the officials of the Congress to facilitate the visits by the general members to the different hospitals and institutions of surgical interest in Paris, and of these I availed myself to as large an extent as possible. At the Hôpital Bichat M. Terrier, the senior surgeon, showed the members of the Congress who visited the institution everything that was to be seen, and took trouble to explain what he showed. The newer portions of the Hôpital Bichat, those devoted to the treatment of surgical complaints of women, and the operation theatres, are constructed on a plan invented by M. Tollet, whose principal idea evidently was that these buildings should be such as could be easily kept in a condition suitable to their purpose, viz., thoroughly aseptic and fit places for the surgical treatment of operation cases. All these buildings were constructed largely of iron and Portland cement. The floors were of cement, no wood being visible in the wards except in the window frames, tables, chairs, and cupboards. In order to enable the insides of the wards and operation theatres to be readily and completely disinfected, if occasion should arise, no sharp corners were allowed to exist. Instead of one wall joining another at right angles, as usually occurs in buildings, all the corners, both concave and convex ones, were rounded off, in this way making it easy to wash and disinfect them. The walls themselves were painted with a hard enamel paint of a light grey colour, which stands washing without injury, and which showed no cracks or blisters. In every particular the insides of the buildings gave one the idea that, with ordinary care, a thoroughly fresh and aseptic condition was possible. The ventilation was carried out by means of windows and fireplaces only, and appeared to be ample. The blocks I visited were on the pavilion plan, and had windows on either side, one window to two beds. The nurses' rooms and the waterclosets were outside the wards and connected with them by short corridors. There are two operation rooms, and to each operation room is attached an "isolation ward," in which the patients remain for the first few days after operation. One operating room is specially reserved for abdominal sections. Both operating rooms are well heated by means of hot-air stoves, and each contains a steam steriliser in which all instruments, silk sutures, &c., used at operations are previously treated, after which they are placed in antiseptic solutions for use. The operating table is of metal, and when in use it is not covered by any sheet or bedding, the patient being laid on the bare table; this with the view of preventing contamination of wounds by contact with any substance not "surgically clean." The most minute attention is paid to the treatment of wounds in order to have aseptic results, and with the greatest success. The ward for patients on whom laparotomy has been performed is on the ground-floor beneath the operating room, and here also is a small ward in which patients are placed for two or three days previous to operation, and where the anæsthetic is administered. After operation the patient remains two or three days in the "isolation ward," and is then transferred to the first-floor ward, unless, for one reason or another, her condition does not warrant the move. In the Bichat Hospital the heating is carried out by ordinary fireplaces; the beds have no curtains; electric bells are conveniently placed that the patients may summon the nurses, of whom two are specially attached to each ward. The patients and the nurses in the pavilion for laparotomies are prevented, as far as possible, from communication with other parts of the hospital; the superintendent only is allowed to pass from one to the other. On one of the ward nurses rests the responsibility of the preparation of the dressings, and the cleansing and sterilisation of the instruments by boiling in water.

Hôpital Lariboisière.

At the Larboisière the members of the Congress were received on Thursday by M. Berger, whose day for operations it was. On this particular day he performed three operations, a craniectomy on a microcephalic idiot, a radical cure for hernia, and a plastic operation on a girl for the restoration of the lower lip, which had been destroyed by a burn. In the case of craniectomy M. Berger made an incision across the vertex, extending from above one ear to above the other, and turned back the scalp; he then made three trephine holes and with suitable forceps removed an elliptical piece of bone of the same length as the incision and about two inches wide at the broadest part. He then irrigated the wound with hot perchloride solution, and replaced the scalp, using interrupted silk sutures and putting in a small roll of gauze as a drain; next the wound he placed a thick salol compress, and over all a large quantity of sterile gauze. Salol is the substance he relies on as an antiseptic in all his operation cases. M. Berger informed us that he had had distinctly good results in these cases from similar procedures. The radical cure was done on a case of inguinal hernia, the method being to dissect out the sac from the scrotum, and to free it towards the internal ring. M. Berger then pulled down the sac and ligatured it with silk, cutting it away below the ligature. A second ligature was passed through the stump of the sac, and the needle carrying one end of it was passed up the inguinal canal and out through the skin over the internal ring where it was unthreaded; it was then threaded on the other end of the same ligature and brought out through the skin within a short distance of the spot at which the first portion of the ligature emerged; the two ends were then tied together, and a small incision made in the skin between the two points of exit, so that the knot, when the ends had been cut off, slipped through it into the subcutaneous tissue. By this means the stump of the sac was made fast near the internal ring, and the thread fastening it was subcutaneous. The pillars of the ring were brought together by means of silk sutures, the wound closed, and a salol and sterilised wool dressing applied. This operation M. Berger designates the "radical cure by the modified Bessini method."

M. Berger then did the second stage of a plastic operation for the restoration of the lower lip of a girl which had been destroyed by a burn, the first stage of which he had performed ten days previously. M. Berger explained that, on admission to hospital, nothing of the lower lip, from the corners of the mouth to the lower edge of the maxilla, remained except some cicatricial tissue firmly bound down to the bone, and that the disfiguration was very marked. He had performed the first stage of the operation ten days before by taking a flap of skin from the arm; the arm had been kept applied to the face for nine days when the connexion of the flap with the arm had been divided. When the patient was shown to us nothing remained to be done except to refresh and accurately adjust the base of the flap in its new position, extending from the corners of the mouth vertically down to the edge of the lower jaw. When this had been accomplished the new lip presented a fairly natural appearance, and must have been a great improvement on the original condition.

Operating Theatre.

The operating room at the Lariboisière was very perfect for the purpose for which it was intended, but it was kept at the very uncomfortable temperature of at least 80° F. The floor was concrete; the walls were covered with a hard enamel paint; everything in the room which could be suitably manufactured of iron, glass, or earthenware was so made, with highly-polished surfaces easily rendered aseptic by heat. A steam steriliser was placed at one end of the room, as well as a copper-boiler, which was used for disinfecting instruments, and all other materials used in operations, which are capable of being so treated. On shelves, about eight feet from the ground, were placed the glass tanks for antiseptic solutions, carbolic acid, and perchloride of mercury. The wools used by M. Berger were absorbent, but not saturated with any germicide; on the other hand, they had been sterilised by heat. All the materials for surgical dressings, gauzes, and wools, were preserved from contamination in large glass jars, and were removed from these only by persons whose hands had been rendered as aseptic as were the hands of the operator himself, or by means of forceps. Nothing could exceed the care and trouble expended on the efforts to achieve aseptic results in the operations we saw at the Lariboisière, and we were informed that their previous experience only encouraged them to persevere in their attention to minute details tending towards this desirable end. The operating table used by M. Berget was a most convenient one. It was made mostly of iron, and that portion of it on which the patient lay was divided into transverse sections, about six inches wide, all of which could be let down so as to be clear of the patient's body. By this means the application of dressings was made easy, for it was never necessary to raise the patient for this purpose; one or two sections of the table were let down beneath the part where the dressing was to be applied, and the bandages could be passed round without difficulty.

Hôpital International.

Another institution at which arrangements had been made for the reception of members of the Congress was the "Hôpital International." A surgeon of one of the Paris hospitals who has not been promoted to the "Faculté de Médicine" before he reaches the age of 63 has, *de facto*, to retire from his hospital appointments. This rule affecting M. Péan, and he not feeling at all inclined to retire into private life, and lose the greater part of his opportunities for operating, founded the International Hospital, and built it at his own expense. It is constructed on the most modern principles; it is lighted by electricity, and supplied with a "lift." The hospital was officially opened in January 1893; but it is not yet quite completed. Nevertheless, M. Péan has been for some months at work in it, principally at abdominal surgery, and as many patients were under treatment on the day we visited the hospital as there was accommodation ready for. The hospital is built around four sides of a square court-yard, and is three stories high. The wards have windows on each side, and are spacious, well lighted, and the ventilation is all that could be desired; the floors are of cement and stone, and the walls are painted a light grey colour. In the operating-room, of which the temperature was very high, the minutest details were attended to in order to render its condition aseptic and to keep it so. Steam and hot air sterilisers, and copper vessels with Bunsen gas burners for treating instruments by boiling in water were fixed in a small room adjoining the operating-theatre; the instruments were kept in glass cases on glass shelves. The operating table was of iron, nickel-plated, and was a piece of mechanism of curious ingenuity. By means of levers and cog-wheels and pedals, worked somewhat like those of a dentist's chair, the patient lying on it could be put into any position convenient for the operator. On the day in question M. Péan performed two operations, an ovariotomy and a vaginal hysterectomy for uterine fibromata. In the latter case he removed about 15 fibromata, small and large, incising the vaginal wall at its junction with the cervix, with a curved bistoury, and pulling down the uterus by means of a powerful vulsellum forceps. He used no ligatures for hæmorrhage, but when a vessel requiring it was cut he clipped on an artery forceps, about 12 inches long, and left it in position, so that when the operation was completed there were, at least, 30 of these in the vagina, the ends protruding, and M. Péan informed us that they would not be removed until the next day. In the case of ovariotomy no drain was used, nor was the abdominal cavity flushed out with any antiseptic fluid or with water; but, on the other hand, M. Péan had paid special attention to preventing blood or fluid from the cyst flowing back into it by packing with flat sponges. Sterilised wool, untreated by antiseptics, was the dressing used, and the wound was closed with silk sutures, interrupted and placed far apart. Both patients were under chloroform when brought into the theatre, and the only point which seemed unsatisfactory was the length of time they were allowed to lie on the table before the operations were commenced, while M. Péan gave a lecture on each case and referred to many other matters besides.

Anæsthetics.

Chloroform was the anæsthetic used in all the operations I saw performed; ether, I was told, was seldom administered in the Paris hospitals, and it would appear that the French anæsthetists and surgeons quite hold with the conclusions of the Hyderabad Commission, for they pointedly disregarded the indications of danger which might be given by the pulse, and only watched the patient's respiration. One of them told me that if the surgeon for whom he was giving chloroform saw him "noting the pulse he would be very angry."

On Thursday afternoon no meeting of the Congress was held, but the members were invited to see Dr. Chaput, of Paris, give a practical demonstration of the treatment of wounded intestine, and to visit the Pasteur Institute. Having seen the former I found it was too late to visit the Institute.

Wound of Intestine.

M. Chaput gave his demonstration at Professor Cornil's laboratory in the rue de l'École de Médicine, a large dog being used for the purpose. The object of experiments to which he had devoted much time and attention, was to devise some method of treating wounds of the intestine by which the delay which usually attends the necessary manipulations in these cases might be obviated; and certainly the dexterity with which, at the demonstration, he performed the operations, and the short time occupied in doing them left nothing to be desired.

Sutures.

The methods of intestinal suture practised by M. Chaput are the Lembert suture and the Lembert-Czerny suture, or a modification of the latter. For the purpose of closing simple clean-cut incisions into the intestine he uses Lembert's suture; but for resections and for "simple intestinal grafts," which will be referred to later on, he employs the Lembert-Czerny suture. In the "suture by abrasion" he has great faith; the mucous coats are dissected off the muscular to the extent of a centimetre, the surfaces which had been in contact with the muscular coat coming together within the intestine, and the raw surfaces of the muscular and serous coats coming together outside the intestine. "This procedure is applicable for circular suture of the gut, and is always indicated in operations for the cure of artificial anus."

M. Chaput lays great stress on the correctness of the operative *technique*, and on the dieting of the patients, if success is to be looked for in these cases. He pointed out the importance of avoiding contamination of the peritoneum by fæcal matter, of accuracy of suturing, and of the use of saline laxatives as recommended by Mr. Lawson Tait, in this country, in cases of traumatic peritonitis. Suturing for resections should always be done in two lines, one at the edge of the section, joining mucous membrane to mucous membrane ("*muco-muqueuse*"), and one at some distance from it bringing the serous coats together (*séro-séreuse*), and the extent of surface brought into contact should not be less than one centimetre, or about three-eighths of an inch. It is of the greatest importance to bring in contact extended serous surfaces; "a " single line of sutures only gives a linear contact with gaps in the intervals " between the points of suture; union cannot hold under these conditions, " and peritonitis is almost certain." M. Chaput pointed out that Senn advises covering the lines of suture with patches of omentum, but says that he himself, in numerous instances, proved that this did not prevent the onset of peritonitis when the operative *technique* had been faulty.

Diet.

The diet of the patient previous to and after the operation is of great importance. Soup and milk should be allowed for two days before operation; this tends to prevent vomiting resulting from the chloroform. After operation no food or drink of any kind is given for 24 hours, during which thirst may be obviated by rectal injections of water-gruel. Small quantities of soup or milk by the mouth are allowed after the first 24 hours; liquid foods only are given, and in small amounts, for 15 days, after which solids may be given. Opium is given during the first three days, unless peritonitis is threatened. Should tympanitis supervene before the eighth day a dose of calomel and an enema should be given, and in any case the use of the enema is advisable on this day.

Obliteration of Perforations.

As already mentioned M. Chaput closes clean-cut perforations of the intestines by means of the Lambert sutures in the ordinary manner except that he uses two rows. For perforations accompanied by loss of substance he performs what he terms "simple intestinal graft." In those cases which are not amenable to closure by means of the Lembert suture, where loss of substance has occurred, surgeons have hitherto performed a resection or a partial resection; M. Chaput in these cases, when the mesentry is not involved, does an "intestinal graft." When the loss of substance measures a quarter of the circumference of the intestine, suturing would result in considerable narrowing of the tube. M. Chaput's operation is intended to obviate this, and at the same time to avoid the performance of a complete or partial resection. The procedure consists in obliterating the perforation by suturing its circumference to a neighbouring coil. Any coil suits, so long as a spot is selected at

Intestinal grafts.

least eight inches above or below the orifice to be closed. The perforation is laid against the convex side of the coil chosen, and four principal sutures are passed, attaching the wounded coil to the sound one, and piercing the former at a distance of about a quarter of an inch from the edge of the perforation. One suture is passed above and one below the wound, across the long axis of the gut, and one on either side, parallel with it. As many more sutures as may be considered necessary to prevent all chance of extravasation are then inserted. These sutures are sero-muscular. M. Chaput has not performed this operation on man, but he has done it many times experimentally on dogs with excellent results. In gunshot wounds of the intestines, where loss of substance always occurs, this operation, which is easy of performance and takes much less time than an excision, should prove a good substitute for the more tedious procedures, and this all the more that in these cases the wounds are nearly always multiple. M. Chaput was most careful to render the skin of the abdomen aseptic in his operation on the dog. The skin was shaved; it was then scrubbed with a nail brush and hot water and soap, and washed with ether and perchloride solution, 1–2000. All the instruments used by him were made aseptic in a steam steriliser and then placed in an antiseptic solution. The intestines, when taken outside the abdominal cavity, were laid on a cloth wet with perchloride lotion. The materials for sutures recommended by M. Chaput are catgut and silk threads of the thinnest kinds, and he prefers the latter; the needle he uses is Reverdin's "left-handed needle," as modified by himself, his modification being that he has had it made very much finer than the original. As M. Chaput's demonstration took place at almost the same hour as that fixed upon for the members of Congress to visit the "Institute Pasteur" I was unable to see the latter.

By the kindness of M. le Dr. Dujardin-Beaumetz, Director of the Medical Department of the French Army, I was enabled to visit the hospital and school of the Val de Grace; but these have already been fully described by Sir Thomas Longmore in his report of 1889. M. le Dr. Schneider, Med. Major de 1re cl. of the Office of the Minister of War, was good enough to show me round the "*Magasine Central*," and the "*Docks du service de Santé Militaire*," the former of which is a large store in which are kept all kinds of equipment used in the carriage of sick and wounded men, and the latter an immense store of equipment used in war hospitals, including medical and surgical appliances of every description. The surgical instruments in the latter were of the most modern patterns, suitable for best carrying out aseptic work, and capable of being sterilised by means of moist heat, little wood or other substance liable to injury by boiling being used in their manufacture. Everything surgical which I saw in Paris impressed me with the idea that the French surgeons did the utmost in their power to follow the teachings and practice of Sir Joseph Lister, and the Army Medical Department was by no means behindhand in this matter.

The galvanised iron wire splinting referred to by Brigade Surgeon Lieutenant-Colonel Harrison, Grenadier Guards, in his report in Appendix No. 3, Army Medical Department Report for last year, is a most suitable material for use by bearer companies and in field hospitals; it is light, strong, easily manipulated, and with it joints can be immobilised, and most fractures kept in position. All the stores in "The Docks" with, perhaps, the exception of drugs, were packed and ready for transport at a moment's notice, and one must conclude, seeing so vast a collection of hospital and medical and surgical *matériel*, that the French Army Medical Service should be prepared for any emergency. One of the great reasons that this is so is that the officer responsible for the efficiency of that service has the spending of the money voted for its maintenance.

In conclusion, I must take the opportunity of saying that nothing could exceed the courtesy and kindness of M. Lannelongue, the President, and of M. Pozzi, the general secretary, to the foreign members of the Congress.

APPENDIX No. IV.

MEDICAL REPORT ON THE MISSION OF SIR C. EUAN-SMITH TO FEZ IN 1892, WITH ONE PLAN.

By Surgeon-Captain W. G. Macpherson, Army Medical Staff.

Introductory Remarks.

In submitting the following report I am deeply conscious of its many imperfections and shortcomings, both from a scientific and from a literary point of view. It had to be written entirely at odd moments and in leisure hours, which during the past year have been far from many, and was eventually completed during an exceptional pressure of other work. The only claim I can put forward in its favour is that it is a series of facts personally observed and jotted down at the time in a country about which very little information of a purely medical and scientific character has been published.

I have summarised my notes under four headings with appendices :—

1st. A general sanitary report on Sir C. Euan-Smith's Mission.

2nd. Itinerary notes on the features of the country, camping grounds, and sources of water supply between Tangier and Fez, and between Fez and Rabat.

3rd. Sanitary notes on Fez and its surroundings.

4th. Remarks on the population and meteorology of the interior of Northern Morocco, and on the diseases and medical customs prevalent amongst the inhabitants.

The appendices contain the details of the *personnel* of the Mission, sanitary regulations, along with a plan of the water supply of Fez, vital statistics of children, and meteorological tables.

The language of the country is Arabic, modified by certain peculiarities, which are readily grasped by anyone acquainted with the classical language of the Moslem races; but its pronunciation and idiom differ considerably from the Arabic of Egypt, although it is said to be readily intelligible to the Arabs of Yemen and its neighbourhood. Many Berber (*Shluh*) and Spanish expressions are, however, in use, which are, of course, foreign to Eastern Arabic.

Names of places are constantly changing, and there is often the greatest discrepancy of opinion even amongst natives of the country regarding the designations of the less important and less known rivers, fords, villages, &c., and one must be warned against expecting any one name to be sufficient indication of the position of such places in Morocco. Possibly the nomad habits of the people have led to this embarrassing state of affairs.

With regard to the bibliography of the country the fullest list will be found in M. de la Martinière's book, "Morocco." The character of this bibliography can be gathered from the following analysis of Martinière's list, which covers the period from 1844 to 1887.

TABLE of BOOKS and PAMPHLETS on MOROCCO, published between 1844 and 1887.

Language.	Historical and Archæological.	Political.	Social and Political.	Travels and Adventures.	Military.	Nautical.	Natural Science.	Philological.	Medical Subjects.	Commercial.	Totals.
French - -	44	44	24	105	5	5	8	2	6	5	248
Spanish - -	27	19	18	38	13	2	—	2	—	3	122
German - -	2	7	13	33	—	—	1	—	—	16	72
English - -	3	4	3	41	—	3	2	—	—	3	59
Italian - -	—	—	2	6	—	—	—	—	—	—	8
Portuguese - -	—	—	—	—	—	1	—	—	—	—	1
Totals - -	76	74	60	223	18	11	11	4	6	27	510

The meagre supply of writings upon purely sanitary and medical subjects may, therefore, be pleaded as an excuse for many of the apparently trivial details, with which I have burdened this report.

I.—GENERAL SANITARY REPORT ON THE MISSION OF SIR C. EUAN-SMITH TO FEZ.

The Mission of Sir C. Euan-Smith to the Court of His Shereefian Majesty the Sultan of Morocco left Tangier on the 27th April 1892, and arrived on the 12th May in Fez, where it remained in quarters for exactly two months. On the 13th July the camp was pitched at the Ràs el Ma, outside the city, and stayed there till the 15th July, when the return journey to the coast was commenced. Salee (Rabat) was reached on the 21st July, and the Mission embarked on board H.M.S. "Amphion" the same day, reaching Tangier the following morning. The camp followers with the camp equipage under the charge of Lieut. Wilson, Highland Light Infantry, and Mr. Carlton, interpreter, continued the journey by land, *viâ* Larache and Arzīla, and the mission may be said to have terminated on the arrival in Tangier.

The strength of the Mission was 288, consisting of 37 Europeans, 246 Moors, and 5 natives of British India. There were 110 riding horses, 180 riding and pack mules, and 56 baggage camels, making a total of 346 animals for transport. The camp was consequently large, and consisted of from 70 to 80 tents; and in addition to the regular *personnel*, the details of which are given in Appendix I., the Kaid of each district supplied a special escort of 50 to 100 cavalry soldiers, as the Mission passed through his territory.

The details of the marches will be found in the Itinerary Notes of the journey to and from Fez. On the journey to Fez they averaged 12 miles daily, the longest being 17 miles and the shortest 8 miles, *i.e.*, excepting the last march of all into Fez, which was only 4 miles. The distances were measured by timing the standard bearer of the escort, who proceeded at an even pace throughout of 4 miles an hour. During three marches the pace was checked by a pedometer. The total distance, calculated at 171 miles, was accomplished in 16 days of 14 marches and two halts.

The return journey from Ràs el Ma to Salee was made in seven days of six marches and one halt. On two of the marches the pace was slightly more rapid, and the distance estimated at 128 miles; so that the marches averaged over 21 miles each. During the last four days a distance of 92 miles was covered, or an average of 23 miles daily. The longest march was 30 miles, viz., along the plain from Ben el F'keh to Meshra er Rimla.

These marches were longer than had been anticipated. The information upon which they were based was obtained from the Swāni men and other camp followers; and the following tabular statement shows how untrustworthy is information from such sources in a country like Morocco. An itinerary prepared by Kaid Maclean of the Sultan's Army gives a much more accurate statement of the total distance, and is entered for comparison. The table refers to the last four marches only, viz., from Segota to Salee.

Marches from Segota to Salee. Roman = Marches of the Mission. Italics = Kaid Maclean's Itinerary.	Time as calculated by Native Informants.	Time as actually taken by Mission.	Time as calculated by Kaid Maclean.	Remarks on Water Supply.
	Hours.	Hours.	Hours.	
1. Segota to Ben el F'keh - -	4	5	—	Small, shallow, surface stream.
1. Segota to Sidi Kassim - -	—	—	4	*River R'dem.*
2. Sidi Kassim to Walad Khel - -	—	—	4	*River Bet.*
2. Bin el Fakeh to Meshra er Rimla -	5	7	—	Meadow and marshy stream.
3. Walad Khel to Lallah Ito - -	—	—	4½	*Surface well (muddy).*
4. Lallah Ito to Sidi L'Aishe - -	—	—	4½	*Surface well (muddy).*
3. Meshra er Rimla to Bir Rammee -	5	5	—	Marshy lake.
5. Sidi L'Aishe to Bir Rammee -	—	—	4	*Surface well, good.*
4. Bir Rammee to Salee - - -	3½	5	—	—
6. Bir Rammee to Salee - - -	—	—	1½	—
Total (hours) - - -	17½	22	22½	

The marches were commenced during the journey to Fez at 8 a.m., and usually finished in the forenoon, but on one or two occasions a long halt was made half way. On the return journey the camp was roused before sunrise, started at 5 a.m., and, except on one occasion, continued without halt to the next camping ground.

Special remarks regarding the camping grounds will be found in the Itinerary Notes. The camp itself was pitched in the form of a crescent, with the concavity or convexity to the front according to the nature of the ground. The kitchens and tents of the servants and camp followers were in the rear of the crescent with the animals picketed amongst them. There was, as a rule, an absence of regularity in the pitching of these tents, but, as they were scattered rather than huddled together, there was always ample air space. Latrine tents were pitched 50 yards in rear of the extremities of the crescent.

With the exception of field officers and bell tents accompanying the officers from the Gibraltar garrison and one or two private tents, the Moorish "qobba" was the form of tent used for all except mule drivers, who occupied light shelter tents (*Khazándh*). The qobba is a large single-pole circular tent, shaped to resemble a Marabout or Saint's tomb. The plainer and smaller sized qobba makes a fairly light mule load. It is about 15 feet in diameter, 10 feet high in the centre, and 5 feet at the sides, enclosing a space of over 1,700 cubic feet. The poles are thick square poles divided into two pieces. The tops and sides are of sail cloth stamped with Moorish patterns, and generally of a single ply. The Kaids and other officials, however, possess qobbas lined inside with materials and colours of a rich description.

The chief feature of this form of tent is the height of its sides, which in larger tents are 5½ to 6 feet high. They are attached to the base of the conical top by hooks, and when they are unhooked and let down at intervals, free currents of air enter from all directions and render the tent cool, comfortable, and well ventilated even in the hottest weather. These tents are found all over Morocco, the making of them being a speciality of the country.

Cooking on the march was carried on in open charcoal braziers, which answered admirably. Charcoal, however, had to be carried from Tangier, in consequence of the almost entire absence of material, out of which such fuel can be prepared, in the interior of Northern Morocco. In the country districts the natives use for fuel palmetto leaves, dried thistles, fennel, and cow-dung. In the kilns and *hammáms* of Fez dried straw (*tibin*) is the fuel used. The charcoal, obtained in the markets there, is made out of the roots and branches of forest trees growing on the slopes of the Atlas.

Food was supplied by forced contribution. The daily supply (*mona*) consisted of sheep, poultry, sugar, milk, butter, eggs, bread, candles and any other articles, such as vegetables or fruit, which the Kaid of the district thought fit to send. The mutton is of excellent quality. Bread is supplied in flat circular loaves, weighing about ¾ lb. each, well baked and aërated but containing a very small proportion of crust. The finer qualities are baked close and white, but, as a rule, the loaves are coarse and dark coloured, though pleasant to the taste. Ergot barley, it should be noted, is not uncommon in the country and occasionally may find its way into the bread. The butter (*zibdah*) is of a fair and palatable quality. Fresh butter (*smin*) is obtained in some places, as, for example, in Alkazár, and good buttermilk (*libin*) is found in the villages and freely offered to strangers.

Except in the towns vegetables and fruit are scarce and rarely cultivated, a fact which again indicates the nomad habits of the village population. In Fez and Alkazár such vegetables as cabbage, lettuce, beetroot, carrots, French beans, lentils, onions, and vegetable marrow are extensively grown. The commonest fruits are olives, oranges, pomegranates, figs, melons, and grapes. Lemons were exceedingly scarce at Fez, at one time a single lemon costing 5 reals or one shilling. Later on none could be obtained at any price. Cherries are abundant at Sefroo, south of Fez.

The forage consisted of grass and barley, of which there is no lack in the country. During most of the year luxuriant meadows of hay and clover afford abundant grazing grounds for animals, and in some parts of the Beni Hassan plain a short, succulent grass, similar to the *doob* grass of India, was found at a time when all other vegetation was parched and withered.

The subject of the water supply is of such importance that I have included it in the special report comprised in the Itinerary Notes, and additional remarks will be found below in the notes on the general sanitation of the Mission. It will be sufficient to state here that, for drinking purposes, water collected in bottles from pure sources along the route and aërated water from Tangier alone were used by the Europeans. The Moors consider muddy water the healthiest, and openly expressed their opinion that I had no sense in my efforts to obtain good clear water.

Transport in Morocco is entirely by pack animals. There are no wheeled carriages of any description and country carts are absolutely unknown. So also is coolie labour, at any rate in the districts traversed by the Mission; but this fact does not preclude the Moor from letting his women kind trudge alongside of him, carrying his goods and chattels.

As far as the features of the country are concerned there is no reason whatever why good carriage roads have not been made. Even those that now exist might be made suitable for carts, though they are more of the nature of tracks than of roads. Indeed Rohlf's description of them in 1861 is an exact and accurate description of what they are now. "A Moorish road," he writes, "consists of a number of paths running by the side of one another. If "the route is much frequented there are many of the said paths, 20 or even "50 in number, and as they often wind into and join one another, they pre-"sent the appearance of a network in the distance." The chief difficulty to be overcome is the number of clay ditches, which have to be crossed from time to time and which, in wet weather, are frequently impassable. Thus on the 4th March 1892 Fez was threatened, after severe and continuous rain, with famine, owing to the food supplies from the country failing, in consequence of the roads having become impassable.

The rivers, too, except the M'kis and the Seboo at Fez, are unbridged and no use is made of them as water ways.

Transport by pack animals, viz., by camels, mules, ponies, and donkeys, is consequently, as already stated, the sole method of transport in the country. The camels, belonging to Mission, carried stores for use in Fez and marched more or less independently of the rest of the camp. On the return journey, however, some of the drinking water was entrusted to them; and, as the marches were long, they arrived long after the other pack animals and might have caused serious inconvenience had the whole supply been carried by them.

The mules were invaluable. Indeed they are so useful in Morocco that their price is higher than that of a horse, the best riding mules costing, for example, from 30*l.* to 40*l.* and upwards. The pack mules are strong and hardy. They travel the distance quickly and can carry loads of over 300 lbs. weight for seven or eight hours at a steady pace of 3½ miles an hour. A pair of medical field panniers, weighing under 200 lbs. was a light load, to which additional packages were added by the muleteers to keep the animals from actually running away.

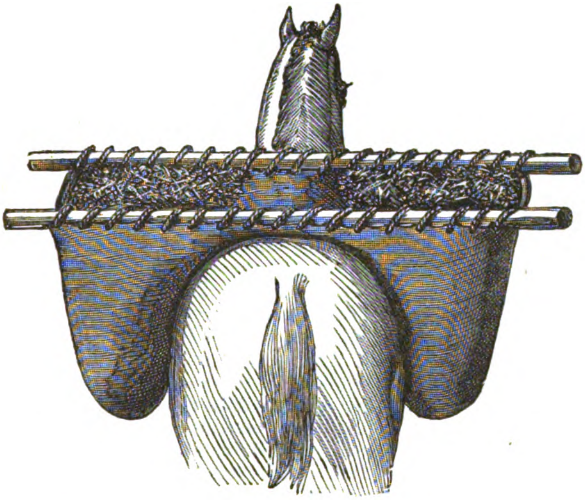
Each pack animal is provided with a pair of *shawarries*, or panniers of palmetto matting made in one piece. The loads are arranged in the *shawarries* on the ground and the whole lifted bodily and slipped over the quarters on to the mule's back, and secured with palmetto rope (*shreet*). Notwithstanding the length of the marches there was scarcely one instance of a mule lying down, throwing its load, or suffering from sore back, and there is nothing but praise to bestow upon the Morocco mule and the method adopted for arranging and carrying the loads.

The horses seen in the country are generally straight shouldered and with drooping quarters; while many of them are unsound in limb. They stand about 14·3 to 15 hands in height, but I should state that the best Barbary horses are not seen in the districts through which we passed.

There were no special arrangements made for sick transport; but a two-mule palanquin, the private property of Sir C. Euan-Smith, accompanied the Mission. I had also with me a field stretcher and a stretcher-dandy, which I had devized and frequently used in India as a Lushai dandy and camp bed; but beyond these there was nothing available but riding animals.

I was prepared, however, in case of necessity to adopt a method of sick transport, which I had observed in use amongst the country people and which it may not be out of place to describe in detail here, more especially as there is apparently no published note of it or of any similar method of such transport, with the exception of an account by a French military surgeon, Dr. Bertherand, alluded to by Sir Thomas Longmore in his treatise on ambulances and called by him the "Arab mode of removing wounded." Dr. Bertherand observed this method during the French wars in Algeria and against the Kabails or Berber tribes of the mountains. Surgeon Otis of the United States Army makes no note of it in his otherwise full report on the transport of sick and wounded by pack animals.

The special feature of the method is that it consists in placing the patient in the recumbent position across the animal instead of parallel with its walk, as in other forms of litter. The litter upon which he lies is formed as follows:—A pair of *shawarries* is stuffed full of chopped straw (*tibin*) and weighted below, if necessary. Two poles are laced securely to them, one along the front and the other along the rear edge. The ends of the poles are allowed to project so as to form handles like the handles of a stretcher. This arrangement is shown roughly in the accompanying sketch. The *shawarries* rest on pads stuffed with straw, on the animal's back, and when blankets or bedding are spread on the top a comfortable couch is formed, on which the patient reclines in perfect ease. One great advantage of the arrangement is that it can be lifted bodily, carried over the animal's quarters and placed on the ground, where it rests, supported by the stuffed *shawarries,* like a bed, without moving the patient.



I was doubtful at first about the motion that would be communicated to a litter of this kind by the animal's walk, and made a personal trial of it. The result was most satisfactory. There was no up-and-down swaying or jolting of any kind, and, if the patient is secured with straps, this ought to be a valuable method of improvising sick carriage and one well worth consideration. There would be no difficulty in improvising a canopy as protection against the sun.

Its chief disadvantage consists in its being uneconomical from the fact that one mule is required for each patient. Against this, however, one ought to note that the *shawarries* need not necessarily be stuffed with straw, but may be utilized for the conveyance of stores. Indeed the most comfortable arrangement experimented with was a litter made of two large wooden trunks, with which a mule was loaded and over which bedding and blankets had been spread. The motion was perfect and the litter broad and capacious. It might even have been practicable to place two persons alongside one another across the mule's back, provided there was no over weighting. By this method, therefore, a pair of field panniers or boxes containing stores could be utilized as a litter.

The medicines and surgical equipment taken with the Mission were packed in two pairs of medical field panniers. One pair was equipped almost as it was received from the Medical Stores at Gibraltar, but the second pair was received empty and fitted with a special equipment. In addition a Field Medical Companion was packed with such medicines and material as might be required during the march. For the qualitative analysis of water I prepared a chemical saddle-bag, which accompanied me everywhere and proved of considerable value.

I had been instructed to do as much medical and surgical work as possible amongst the natives, and the medicines and materials were selected and arranged with a view to carrying out these instructions. Probably much more work of the kind would have fallen to my hands but for the strained relations between the Court and the Mission at certain periods of the diplomatic negotiations; and the expenditure of material was consequently small in comparison with the amount taken. The net cost of this expenditure was 8*l.* 12*s.* 1*d.* The value of the surplus was 16*l.* 5*s.* 6*d.*, the whole being recovered by local sale or generously taken back by the firms who supplied the material. That this was at all possible speaks well for the character of the articles.

Regarding the bulk of the medicines and materials, no special remarks are required. Some of them, the ichthyol, for example, which I considered a useful drug to take to a country where skin diseases are so prevalent, were private stock. Others were specially selected for the treatment of the Sultan, who was reported to be seriously ill and suffering from hæmorrhoids. The attacks, from which he suffered so severely, proved, however, to be attacks of biliary colic.

It is needless to remark upon the advantages of the compressed tablets, tabloids, and ophthalmic discs on an expedition of this kind; they are too well known now to require any special recognition. It is not so, however, with the compressed wool, gauze and bandages, which, probably for the first time in any British expedition, constituted practically the sole material taken for surgical dressings.

These compressed dressings have taken the place of all other material in the French and German armies, and it was the material of the former with which I supplied myself for use during Sir C. Euan-Smith's Mission, not only because of its convenience in packing, but because I was anxious to test such dressings practically in an expedition of this kind.

They are prepared for the French War Department by M. Edouard Froger, of Paris, and were obtained through the Military Equipment Stores' Company, London. All the material is rendered thoroughly aseptic, impregnated with 1 in 1,000 solution of perchloride of mercury, dried and done up in waterproof packages, cemented with an antiseptic paste. The wool is absorbent and of excellent quality. It is compressed into packages, measuring 8″ × 4″ × 2″, and weighing about 10 ozs. each. The packages are kept compressed by five binding strings. The gauze is compressed into packages slightly longer and broader, each containing 20 mètres of the material, which is a kind of tarlatan rather than gauze. The bandages are made of the same material. The larger size are 4″ wide and 5¼ yds. long, rolled and compressed flat into packages of ten bandages each measuring 4″ × 4″ × 2½″. The smaller sized bandage is 2¾″ × 5¼ yards, and each package of ten measures 4″ × 2¾″ × 2½″.

I found the wool invaluable for every form of dressing, and, also, as a substitute for sponges, for swabbing out and disinfecting wounds. Indeed, I very seldom found any subsequent suppuration take place in whitlows and abscess cavities, which had been so disinfected and afterwards covered with a dry pad of this material. I would here remark that the advantage of such preliminary disinfection of all wounds on field service cannot be too strongly advocated. I doubt, however, if it is sufficiently practised. One thing is certain that many a major operation can be prevented and much expenditure of dressing material saved by attention to so important a principle even in the most trivial cases. As a disinfecting solution I used perchloride of mercury, having taken with me several bottles, containing 25 tabloids each of 7½ gr. perchloride of mercury and 7½ gr. chloride of ammonium, each tabloid making a solution of 1 in 1,000 in a pint of water. The convenience of such tabloids on field service need scarcely be pointed out.

The compressed gauze was scarcely used, as the tarlatan seemed hard and not particularly fine. I cannot better express it than by saying that it had too much of a starched appearance; and, as I found the wool the most perfect material of any for placing directly on a wound, I did not see the necessity of using the gauze.

The bandages are scarcely strong enough for fixing splints, although with a little care they may be made to answer the purpose. For fixing dressings there is no fault to find with them. The fact of their being compressed flat does not in the least prevent their being rolled evenly round a dressing or limb.

So far I have pointed out the chief advantages of these compressed dressings, and certainly for facility of transport and, as trustworthy aseptic and antiseptic material, they are unrivalled. The gamgee tissue, for example, which it was necessary to take for use in eye operations, occupied, even when packed tightly, four times the space of a similar quantity by weight of compressed wool. But, for constantly moving field hospitals and for small bodies of troops, where only one or two dressings may be required at a time, compressed wool and gauze, done up in packages such as these, have certain important disadvantages.

In the first place, there is the difficulty of compressing the package into its original size when once it has been opened and the binding strings cut; so that, when a small quantity only is required for a single dressing, it will not be found easy to repack it, unless there is spare space in the pannier. In the second place it is difficult to unfold a compressed package, so as to cut off what is required for a single dressing, without unfolding the whole quantity. This not only makes the difficulty of re-packing all the greater, but exposes the whole package to contamination, when it is unfolded on the ground, as would frequently be the case in camp. This disadvantage was specially felt in using the packages of compressed gauze; and could be obviated by having the gauze cut into quantities required for single dressings before compressing it. I quite expected to find the gauze so divided in the packages sent to me; for, when on a previous occasion I had an opportunity of inspecting the French surgical dressings for field service, I was shown the gauze cut in that manner. (*See* Army Medical Department Report for the year 1889, page 350, where I reported on these dressings conjointly with Brigade Surgeon Lieut.-Colonel Notter, A.M.S.).

Although I would urge nothing to postpone the introduction of compressed aseptic dressings into our own field surgical equipment, these are points, therefore, which it would be well to consider. For base and other stationary hospitals, where one or probably more packages would be used daily, and when they could be unfolded without risk of contamination, the disadvantages, noted above, are not so important. They do not apply, moreover, in any way to the packages of compressed bandages.

Previous Missions to Fez, such as the Italian and German Missions, are said to have suffered severely from diarrhœa, dysentery, and fevers, and special efforts were directed towards preventing by careful attention to sanitary details the outbreak of similar diseases amongst the members of Sir C. Euan-Smith's Mission. A detail which might have been attended to more satisfactorily was the selection of camping grounds, but custom prevented the native officials from seeing the necessity of pitching the camps in any but the usual spots. On one occasion, however, we had to insist on the removal of the tents to a more healthy site.

Minute details were carried out both during the march and in Fez in connection with the collection, boiling, and distributing of water for drinking and cooking. For example, a mule carrying a load of empty bottles accompanied me on the march, and, whenever a good, clear, upland stream or spring could be found, the bottles were filled at it and taken into camp for drinking purposes. One had to provide, too, for a scarcity of drinking water during the marches across the Beni Hassan Plain to Salee. By carefully preserving the empty wine bottles, &c., and, though it may seem a trivial detail, the corks as well (for neither bottles nor corks are to be found in Fez), 17 gallons of Rás el Ma water were stored in bottles and carried for use during the march. Wooden barrels (*barameel*) of 6-gallon capacity had been promised, but 16 only of them reached us just in time to be filled at the springs of the Segota camping ground, the last point on the march to the coast, where good water could be collected. With the addition of 20 gallons more, contained in two iron tanks obtained at Gibraltar, we were thus able to carry with us over 130 gallons of good spring water for use while crossing the plain. We were accordingly independent of the bad water available locally, the use of which would certainly have affected the health of the Mission.

Four of the 6-gallon water barrels constituted a mule load. In consequence of their being new and made of a strong aromatic wood (cedar?), a peculiar taste, which was by no means agreeable, was imparted to the water, and greatly marred its otherwise good qualities.

The natives carry water in skins (*ráwiya*) shaped like the Indian *mussuck*. A pair of *ráwiyas* is slung over a mule's back, but they are useless, except for carrying water from the watering place to camp. For long distances earthenware pitchers (*barráda*) are used.

In Morocco exceptional difficulties will be found in collecting water, so as to avoid pollution, even at the clearest and purest springs. The very best of them will be found occupied by women washing clothes and fleeces of wool at the source. Animals are allowed to stand huddled together in the springs and wells, and the *ráwiya* men, if left to themselves, will invariably collect the water lower down.

This indifference of the Moors towards keeping their springs and wells free from pollution is a marked trait in their character, and one that specially showed itself at the Rás el Ma. There, notwithstanding water guards and other precautions, the head of this magnificent pool was selected for the performance of ablutions and other offices of nature (probably because a convenient leafy screen was afforded by a large fig tree), while the *ráwiya* men filled their water-skins below. Urine, excreta, scabs from ulcers on the legs, and similar abominations were all liable to be washed down into the skins, so that for the time being personal supervision over the water-carriers became absolutely necessary.

Means of filtering and clarifying water should always be taken in a journey through Morocco. The amount and extent of the clay in the soil are so great that muddy water is the rule everywhere, except in certain districts, where there are limestone springs. We brought with us for use on the march three portable carbon filters, the cake of carbon being placed in the centre of a canvas bag; but they did not answer well. The canvas was probably too new and stained the water, while the rate of filtration was too slow. At Fez the water was filtered through two Atkins' silicated carbon filters, which had been brought for the purpose. For clarifying muddy water alum was used.

During its residence in Fez the Mission obtained a water supply carried in barrels from the spring *Sidi Banafoo* in the Mellah or Jews' quarters. It had the reputation of being the best water in Fez, but I could never discover the reason of this, as it did not by any means appear to be particularly guarded against pollution. It had the advantage, however, of being at a higher level than the springs of the *Medina* or Moorish part of the town, and was, in a way, less exposed to surface contamination. None of the water was allowed to be used until it had been boiled. A special supply of fuel and boiling cans was supplied to the kitchen of the house occupied by me and as a surgery, and the water was delivered and boiled there before being distributed for general use.

The members of the Mission were quartered in Fez in three houses; the headquarters in the *Dár ben Niss* and the non-official members in a smaller house, the *Dár Walad ed Dawiya*, lower down the town, and about a quarter of a mile distant. The third house was a small pavilion in a large garden adjoining the *Dár ben Niss.* It was occupied by me as a surgery and hospital in case of need. These gardens were each two to three acres in extent, and the tents of servants and camp followers had to be pitched in them. Owing, however, to the frequent irrigation of the various plots, the site was far from healthy, and it was found impossible to control the irrigation because of a peculiar obstinacy on the part of the woman in charge of the gardens. The European and Indian servants were consequently housed in various parts of the *Dár ben Niss* and in tents pitched on the terrace. The Moors, who had to remain in tents in the gardens, suffered later on from attacks of fever.

The sanitation of the gardens was carefully watched by daily inspections of every hole and corner, and a series of sanitary regulations, given in Appendix II., were drawn up and carried out during the stay of the Mission in the city. In addition to the sanitary precautions detailed there, the slits of the waterclosets inside the buildings were cemented over and the closets shut up. Only one was allowed to remain open, as it was outside the building and convenient for emptying slops and dirty water as well as for the use of some of the servants. The use of uncooked vegetables and salads was also discouraged in consequence of the great prevalence of intestinal parasitic diseases amongst the people of Fez.

Attention to such details of sanitation resulted in the members of the Mission having an almost entire immunity from disease of any serious character. Indeed one only was laid up and unfit for duty. He was a soldier retired from the Royal Horse Artillery, who had served in India, and accompanied the Mission as washerman. He was attacked with fever of a remittent type shortly after arrival in Fez. The washing tents had been pitched near his own, and the ground round about had become damp and sloppy in consequence. He was removed to the hospital building, and the fever gradually subsided there.

On the march to Fez diarrhœa affected several of the Europeans and one or two of the natives, at the fourth camp on the 1st and 2nd May. These attacks were probably induced by chill, consequent upon an extreme diurnal variation of temperature, which is referred to latter on in the remarks upon the meteorology of the interior.

The case of hyperæmia of the conjunctivæ and the case of erythema occurred in the English maids, from exposure to the sun without the protection of veils or goggles. Both cases were severe.

The almost entire absence of sore feet is due to the fact that nearly everyone, including camp followers, rode.

During the residence of the Mission in Fez, diarrhœa, gastritis, and influenza were the chief diseases from which the Europeans suffered. The attacks of diarrhœa and gastritis nearly all occurred within a week of arrival there. The attacks of gastritis occurred amongst the servants, every one of whom suffered from errors in diet, and irregularity in obtaining and eating their meals. The change, too, from the regular exercise in the open country to a sedentary life inside the town might be expected to give rise to gastric disturbances of this nature. Nearly all the officers suffered at the same time from diarrhœa.

Influenza of an exceedingly mild type attacked the Europeans at the end of May and beginning of June. It was widespread amongst the inhabitants of Fez, and attacked them most severely. For example, the case of pneumonia treated was the result of such an attack, and was severe and troublesome.

Two of the three cases of dysentery, and one of the two cases of remittent fever occurred amongst Europeans, who were not actually members of the Mission, but accompanied it to Fez and lived apart from it there. They were consequently under totally different hygienic conditions. The third case of dysentery was exceedingly mild, and occurred in one of the servants, who occupied a small closet above one of the waterclosets in the *Dár ben Niss.* The second case of remittent fever has already been alluded to.

The case of continued fever lasted two days only, and was caused by exposure to the sun and fatigue.

The five cases of remittent fever amongst the Moorish members of the Mission were of malarial origin, and occurred amongst Swáni men, living together in the same tent, which had been pitched on a plot of ground, that had been irrigated. The attacks readily gave way to treatment by quinine.

On the return journey there was no outbreak of disease requiring notice, except the two cases of continued fever. Both of these cases were due to exposure to the sun, and hadj the temperature not been reduced by antipyrin, it might possibly have passed, in one of the cases at any rate, to hyperpyrexia.

The cases of illness amongst the inhabitants of the country are the subject of special notes upon the diseases of the interior of Morocco. Many cases came to consult me, but they were cases which were either unsuitable for treatment on the march, such, for example, as an ovarian tumour case, or too trivial to note. Amongst the latter cases were numerous women suffering from sterility, who came to camp in the hope of getting *Dua besh walad* (medicine for children) from the Christian *babeeb* ; and still larger crowds of men, whose sole desire was to obtain a good *suhlah* or purgative. I found that four of the cathartic pills were usually efficacious and brought contentment to the recipient.

Surgical operations were performed in cases of ascites, cataract, trichiasis, corneal opacities, abscesses of glands, &c. with good results, but, as mentioned elsewhere, no operations involving amputations of any part were permitted even in cases urgently demanding operative interference.

II. ITINERARY NOTES ON THE FEATURES OF THE COUNTRY, CAMPING GROUNDS, AND SOURCES OF WATER SUPPLY BETWEEN TANGIER AND FEZ AND BETWEEN FEZ AND RABAT.

A.—TANGIER TO FEZ.

Table of Route.

Date of March.	Name of Camping Ground.	Estimated Distance from last Camping Ground.	Estimated Distance from Tangier.	Estimated Elevation above Sea Level.	Nature of Camping Ground.	Source of Water Supply.
		Miles.	Miles.	Feet.		
April 27 -	Qaa' er R'mil - -	14	14	30	Bank of river -	Brackish river.
„ 28 -	„ „ - -	—	—	—	„ „ -	„ „
„ 29 -	Sok el Gharbiya -	12	26	250	Large grassy plateau.	Surface wells.
„ 30 -	Sidi el Yamáni -	12	38	730	Grassy plateau -	„ „
May 1 -	Thláta Răba' Raisána	14	52	500	„ „ -	„ „
„ 2 -	El Ksár el K'bir -	13	65	150	Plain near town -	River el Koos.
„ 3 -	Kária er Ramoos -	17	82	300	Grassy plateau -	River M'dá.
„ 4 -	Ferry of the Wad es Seboo.	14	96	30	Bank of river -	River es Seboo.
„ 5 -	Sok Jumá el Hawáfa	8	104	30	Market place on bank of river.	„ „
„ 6 -	Sidi Gueddár - -	12	116	50	Stubble field on plain.	River R'dem.
„ 7 -	Báb Chooka - -	9	125	250	Stubble field in enclosed valley.	Small surface stream.
„ 8 -	„ - -	—	—	—	„ „	„ „
„ 9 -	Segota - - -	10	135	1,300	Grassy plateau -	Limestone springs.
„ 10 -	M'kis - - -	16	151	600	Field in valley -	River M'kis.
, 11 -	N'zalah Faráji -	16	167	1,200	Field on river bank.	River el Fas.
„ 12 -	Fez - - -	4	171	1,100	In quarters in gardens.	Limestone springs.

1st MARCH.—TANGIER TO QAA' ER R'MIL.

Features of the Country.—The road passes through a cultivated country of undulating hills and grassy plains. It is very sparsely inhabited. The soil is sandy, but intersected with numerous clay ditches. The vegetation consists of low palmetto bushes, and there are no trees or forests visible. The villages are *douar* or tent villages, and are few and far between, generally consisting of about 12 tent huts each, surrounded by *zareebas* of aloes and prickly pear.

Rivers.—The *Maghghagha* or Marhar is forded just before reaching the camping ground, at a ford called Meshra esh Shadjīra. It is a tidal river, flowing into the Atlantic north of Arzīla, and is surrounded by an extensive marsh in the neighbourhood of the camping ground. The ford is shallow at low tide, and about 40 yards wide.

Camping Ground.—The camping ground is on the south bank of the river, at the foot of some hills, on the slope of which and just above the camp there is a large village. The soil is covered with grass and sandy, the name *Qaa' er R'mel* signifying a sandy hollow.

Water Supply.—From the *Maghghagha*, at the ford. Apparently there is no other supply. The water is muddy, brackish, and bad, being found to contain on analysis an excessive amount of chlorine and sulphates, with some free ammonia, and organic matter; the latter derived probably from surrounding cultivation and swamps.

There is an extensive plateau, about four or five miles to the west, round the base of which there are several clear, limpid springs. It is accessible only by a long detour or by crossing the swamp, and is of limestone formation covered with palmetto and grass. The names of the principal springs are the *Ain Tarfaniya*, on the northern base; the *Ain Chariwal*, across the plateau on the southern side, the *Ani Raba*, *Ain Hammam;* and several smaller springs along the southern base; and the *Ain Zeitoon*, in an olive grove, which is visible at the north-east end of the plateau from the camping ground at Qaa' er R'mil.

These springs contain chlorides, lime, and sulphates in moderate quantity, and are said to be tepid. On the 28th April I found their temperature to be 68° F., the air temperature being 64° F. The most peculiar of them is the *Ain Hammam*, which bubbles up like boiling water from a sandy bed, and the *Ain Zeitoon*, a large spring gushing out from amongst the olives.

In the centre of the plateau between *Ain Tarfaniya* and the *Ain Chariwal* there is a village, which derives its water supply from surface wells. Another large village is situated near the *Ain Zeitoon*, and has the same name, viz., *Ez Zeitoon*. This plateau would make a good camping ground for large bodies of troops; but the swamp renders it difficult of access from the main route. It is called *Sherf el Akab*.

2ND MARCH.—QAA' ER R'MIL TO SOK EL GHARBIYA.

Features of the Country.—After leaving Qaa' er R'mil the road rises to the top of a stony plateau, about 300 feet above sea level, lying on the western slope of higher hills of the same formation. At the top of this plateau, and about ½ mile to the west below the road, there are two muddy lakes about ¼ square mile in area each, and separated from one another by a narrow belt of land about 50 yards wide. A large village, Ez Zweitah, is situated on the bank of the further of these lakes. From this point the road descends to the *Wad el Kharroub*, forded at the *Meshra el Hashef*, a point half way between Qaa' er R'Mil and Sok el Gharbiya. It then traverses a series of grassy uplands, devoid of trees or cultivation, to the plateau, where the camp was pitched.

Rivers.—The *Wad el Kharroub* is a tidal river flowing into the estuary of the *Maghghagha* or Mharhar. At the *Meshra el Hashef* it is 40 yards wide, and up to the hocks in depth at low tide. At high tide it is unfordable, at any rate for pack animals, and the march has consequently to be timed so as to reach the ford at low tide.

Camping Ground.—A large grassy plateau, about 400 acres in extent, and exposed to breezes from every direction. It would be a splendid site for a camp were the water supply more satisfactory.

Water supply.—From two surface wells. One of them is on the main route, just before reaching the camp, the other a few yards down the eastern slope of the table-land, near a village and garden, surrounded by a dense *zareeba* of aloes and prickly pear.

These wells are muddy, full of tortoises, and dirty from animals being allowed to stand in them. The second is the better of the two, as it is more remote from general traffic. It is 6 feet deep, and the analysis of its water showed marked presence of free ammonia and organic matter, with lime, magnesia, and chlorides well marked.

Below the village, near this well, there is a small but clear rippling stream, flowing from the surface of the plateau to a richly-cultivated valley on the east, which is apparently well supplied with water from similar upland streams. This stream, however, passes through the village, and is very liable to pollution by its refuse, &c. Like the surface wells, it contains marked traces of magnesia.

Along the route, as the road descends towards the Meshra el Hashef, there are several small unimportant hill streams. They are probably dry in summer, but on the 29th April they contained abundance of clear water, suitable for filling water bottles.

The muddy lakes near Ez Zweitah are dry in summer and swampy. The soil round about is peaty, and the water, at the best of times, is very muddy, containing a considerable amount of chlorine and organic matter.

The water of the *Wad el Kharroub* is brackish, and similar to that of the *Wad Maghghagha.*

3RD MARCH.—SOK EL GHARBYIA TO SIDI EL YAMÁNI.

Features of the Country.—The road continues throughout to traverse grassy uplands, for the first half of the march covered with palmetto bushes, but afterwards with bracken. The soil is a light clay until the bracken vegetation is reached, when it changes to red sand.

Rivers.—None; but two streams delivering a considerable volume of water were passed. The first is muddy, about 20 feet wide and 2 feet deep; while the second, which was comparatively small, flowed in a clear pebbly bed from extensive uplands, devoid of cultivation or habitation. This stream formed a line of demarcation between the palmetto and bracken country. It is doubtful whether there will be much water in it later on in the season; but in early summer it affords a considerable supply of good upland water.

Camping Ground.—Another grassy plateau, exposed on all sides, smaller, but at a higher elevation than the camping ground at *Sok el Gharbiya.* An undulating country of red sandy soil covered with grass lies between it and the sea, which is visible about nine miles to the west. The villages are few and far between, and there are apparently no trees or cultivation with the exception of small orchards in the neighbourhood of the camp and the several villages.

Water Supply.—From a surface well, 300 yards to the east of the camp, and 50 yards below the main route. Like the wells at the last camping ground, it is liable to pollution by men and animals; but it has a freer flow, and when undisturbed it is perfectly clear, and has the characters of good upland water, almost entirely free from lime or chlorides.

The second stream, noted as having been passed on the line of march, is an excellent source of water supply at this time of the year, and water-bottles, tanks, &c. should be filled from it. It flows in a narrow, deep channel, and could readily be dammed.

4TH MARCH.—SIDI EL YAMÁNI TO THLÁTA RĂBA' RAISÁNA.

Features of the Country.—For the first part of the march the road continues to pass over uplands of red sand, covered with grass and bracken; but later on palmetto vegetation again appears. The country becomes more stony, and limestone rocks appear on the surface. About four miles from the camping ground there is an open grassy spot with a single tree in the centre, called the *Sok el Thlátah*, or "Tuesday Market," where the weekly markets of the district are held. Indeed the whole district, *El Khlába* or *El Khlot*, derives its name from it. From this *Sok* to the camping ground the route passes over a grassy plateau, skirting an extensive belt of dwarf oaks, the only forest vegetation met with during the whole journey. There are no villages in the neighbourhood, and the population appears to be very sparse.

Rivers.—None passed. The country is, generally, drier.

Camping Ground.—A long narrow plateau, traversed by the main road, and covered with grass.

Water Supply.—A small insignificant surface well, about 10 yards below the main road, quite close to the camp.

If I remember rightly, there is a surface well at the *Sok el Thlátah*, but I made no note of the fact at the time.

5TH MARCH.—THLÁTAH RĂBA' RAISÁNA TO EL KSÁR EL K'BĪR.

Features of the Country.—The first part of the march is along a plain, to which the road descends from the comping ground. This plain is swampy, the soil being intersected by several stiff clay ditches, some of them presenting considerable obstruction to the passage of pack animals.

Near the south end of the plain, and three miles from Răba' Raisána, the *Wad el Hassan* (*el Maghzen el M'hassen*) is forded, and the ground then rises to a knoll 300 feet above sea level. A few villages are passed near the track, and again a series of clay ditches have to be crossed. The country then becomes sandy, and the route is along a grassy plateau, 300 feet above the sea level, and intersected with occasional clay swamps, to the *Wad el Warour*, a river similar to the *Wad el Hassan*, and about four miles from *El Ksár el K'bīr.* From this river onwards the country is richly cultivated on all sides, and the population markedly denser. This change is very striking after a march through the uncultivated, sparsely-populated uplands between Tangier and El Ksár. The soil in this latter section of the route is a heavy rich loam, every inch being under cultivation. The country is undulating, but opens out into a wide grassy plain about two miles from El Ksár, leading to the *Wad el Koos.*

Rivers.—*Wad el Hassan* (*Maghzen* or *M'hassen*). It is 40 yards wide at the ford, 2 feet deep, and running at the rate of 2 feet per second. Its bed is sandy, and it flows into the *Wad el Koos.*

Wad el Warour.—30 yards wide at the ford, and 2 feet deep, flowing over a sandy bed. It passes through cultivated land, and is said to be dry in summer.

Camping Ground.—On a grassy plain, about one mile north of El Ksár, and the same distance west of the main track. There are several other camping grounds on the north and east of the town.

Water Supply.—From the *Wad el Koos*, about 1½ miles distant. This water is muddy, and contains marked quantities of lime, chlorine, magnesia, sulphates, and organic matter. I was told that there was a good spring near the camp, but after searching for a mile round found nothing but a muddy ditch containing stagnant water. Water hawkers came about the camp selling what they called good drinking water. I could not find out the exact source of this supply, but it had, on analysis, the same characters as the water in the *ráwiyas*, brought from the *Wad el Koos;* the chief characteristic being the presence of organic matter and a copious gelatinous precipitate (magnesia) on the addition of Nessler's reagent.

Along the route the *Wad el Hassan* and the *Wad el Warour* are the only sources of water supply observed.

SPECIAL NOTE ON EL KSÁR EL K'BĪR.

(*Alkazár, Luxor, Uxor.*)

This is the only town passed through on the road to Fez. It is situated on the north bank of the *Wad el Koos*, and although it occupies little more than an area of 100 acres, the minarets of four large mosques and the numerous gardens which extend some distance along the banks of the river, give it the appearance of a town of considerable size and picturesqueness. An idea of its exact size, however, may be given by noting the fact that the measured distance along the streets from the north to the south gates was only 350 yards.

The streets are exceedingly narrow, the main channels being barely sufficient to allow two persons on horseback to pass one another. The bazaars are covered with palmetto matting, forming, as it were, primitive arcades. The houses have no windows overlooking the streets. They are entered through low, stoutly-made doors, embossed with iron bolts, along narrow dark passages to a central courtyard or *atrium*. It is upon the size and artistic taste of this yard that the quality of the house depends, and not upon any external manifestation of architectural beauty or wealth.

The gardens around the town are extensive, luxuriant, and well stocked with trees. The roads are causewayed and the ditches crossed by culverts, probably the relics of previous European occupation.

There is a system of drainage by open brickwork channels, some of them leading to the Wad el Koos; but the majority, especially those conveying the sewage from the interior of the houses, where there is a primitive watercloset, to large cess-pits outside the town.

The refuse is heaped in great embankments outside on the east, where the accumulations of ages have been deposited.

The water supply is from the Wad el Koos, though probably many of the houses have surface wells in their courtyards. The soil to the north and west, at any rate, is argillaceous and damp.

Various travellers have given widely different estimates of the population of Alkazâr; from Hemsö's calculation of 5,000 to Rohlf's of 30,000. The latter calculation was based on the number of houses, which, Rohlf's tells us, he was informed, amounted to 2,600.

I would venture to estimate the population at nearly 10,000, on the basis that the density of population is about 100 persons per acre, a density that is not over-estimated when one considers the narrowness of the streets. Dr. Leaved believed the population to be 6,000, but gives no data on which he bases his calculation.

But whatever the exact number of the inhabitants may be, the extensive cultivation of the surrounding country is evidence that they are numerous and thriving. There are a very large number of Jews among them, but only four Christians, Spaniards carrying on the business of a flour mill.

Most of the townspeople had a pale, pasty, etiolated appearance. The Spaniard in charge of the mill informed me that nearly everyone suffered from intermittent fevers. At the same time, I could not detect by casual observation any evidence of splenic enlargement, as one often can, for example, in passing through malarial districts in India. Probably many of the fevers are filth fevers; as all the conditions of a pre-sanitary age, including a very suspicious water supply, are present; and it is impossible to conceive the town being other than a hotbed of such diseases.

Syphilitic diseases of the nose and skin diseases of the scalp was seen in abundance, but of all affections the most common are diseases of the eye. Indeed, there is no place where they force themselves more prominently on one's attention. For example, in an uncrowded street, where each person could be readily observed, I noted six cases of partial or complete blindness caused by various affections of the cornea in the first 65 persons who passed; and it is probably no exaggeration to say that at least 10 per cent. of the inhabitants have impaired vision from some form of ophthalmia.

When Dr. Leaved writes that "the town is more healthy than the neighbouring town of Larache, situated on the sea," one naturally wonders what Larache must be like.

6TH MARCH.—EL KSÁR EL K'BĪR TO KÁRIA ER RAMOOS.

Features of the Country.—The road from the camp at El Ksâr leads through the town and along a causewayed road to the *Wad el Koos*, which is forded about half mile from the town. The road, after crossing the river, is again causewayed and culverted at some places, and passes across a swampy plain about 1¼ mile wide to a knoll on the other side, which marks the commencement of a series of uplands. The route rises through these uplands over dry and sandy soil covered with brackens for a distance of six miles. It then descends through cultivated undulating hills to an upland meadow valley, narrowing at its southern end, and almost immediately afterwards opening out into another extensive meadow, at the southern extremity of which the village Kária er Ramoos is situated.

Shortly after the road leaves the plain of the Wad-el-Koos, the most prominent feature of the country is a rugged mountainous district about five miles to the east, with one or two large villages and dark gorges covered with olive trees situated high up on the western slopes. With this exception, the surrounding country throughout is a magnificent grassy upland country, sparsely cultivated and inhabited, but enclosing meadows luxuriant with natural hay and wild flowers of every hue and description.

Rivers.—*Wad el Koos*, 50 yards wide at the ford, 3 to 3½ feet deep; current 3 feet per second, banks 20 feet high, steep and muddy. It is a large river, flowing into the Atlantic at Larache (*El Araish*), and probably navigable by boats as far as El Ksár. The water contains much magnesia and sulphates. The plains on its banks are swampy, more especially the plain on the south.

Wad el M'dá (or Meda).—This river has its source in the uplands through which the road passes and flows southward to join the Seboo. During the latter part of the march it flows close to the road, which crosses it at the southern end of the first meadow valley, mentioned above, at a spot near its source, when it is only a small brown upland stream passing through high meadow grass and sedges. After passing into the second meadow it becomes of considerable size, and forms a deep sluggish meadow stream, about 10 yards wide with muddy banks. As it approaches Kária er Ramoos its bed becomes more pebbly, and its flow more rapid.

Camping Ground.—On a plateau close to the village of Kária er Ramoos, and just above a meadow stream of considerable size entering the Wad el M'dá. About half a mile north of the village there is a saint's tomb situated on the top of a knoll overlooking the valley, and forming a prominent land-mark. The ground to the east is more rocky, and of limestone formation. Near the village there is a large olive grove, but no other trees are visible.

Water Supply.—From the Wad el M'dá. The water is collected near a ford, where the river bed is pebbly. The water is fairly clear, and has the character of good upland water.

There are also limestone springs near the camp. They will be found to the north of the village just below the saint's tomb, and in the neighbourhood of the olive grove. The pools are comparatively large, and contain clear limpid water, which is well worth noting, as it is much clearer, and probably purer than the river water.

Along the route there is at this time of the year abundant water of excellent quality:—

(1.) There are mountain burns running by the side of the road towards the Wad el Koos from the uplands, in the first part of the march. They contain many clear pebbly pools. The flow is small, however, and was calculated to amount to not more than 30 gallons per minute. The water was analysed, and found to have the characters of pure upland water. Later on in the season these burns are probably dry.

(2.) The *Ain el Berd* (or "the cool spring").—This is one of the feeders of the mountain burns, and flows over a bank by the side of and above the road, at a point four miles south of El Ksár. It is supplied with water from the uplands on the west of the road, and is recommended as the best place on the route for filling water bottles, &c. The water is good, cool, and clear, and contrasts in a marked manner with the turbid, muddy water which alone could be obtained since leaving Tangier.

(3.) The *Ain el Fawárad.*—This is the name given to an upland stream at the southern end of the first of the two meadow valleys mentioned above. It is, indeed, the source of the Wad el M'dá, the *Ain el Fawárad* being, in fact, the name given to the spot where, as noted above, the road crosses it. This stream contains good upland water, and discharges about ten times as many gallons per minute as the *Ain el Berd.* The water is not, however, so easily collected.

7TH MARCH.—KARIA ER' RAMOOS TO THE SEBOO FERRY.

Features of the Country.—Immediately after leaving the camp, the road fords a fairly large meadow stream, 10 yards wide, somewhat rapid and turbid, and with clay banks. About one mile further on the Wad el M'dá is crossed at a ford about 15 yards wide, 18 inches deep, and with a shingly bed. On the other side the route rises to a plateau, 75 feet above the banks of the river, and continues along it for some distance to a tent village (*douar*) of eight tents. The soil of this plateau is dry, sandy, and covered with palmetto. It is intersected with several clay ditches, and the surrounding slopes are cultivated. About a quarter of a mile below the *douar* the M'dá is again forded, and the road then makes for a saint's tomb, visible on a rising ground at the south end of the plateau. After passing through a sandy cutting below this tomb it emerges on to another extensive plateau, which gradually slopes towards the plain of the Seboo. The soil of this plateau is red sand with occasional clay swamps, and it is covered with grass and palmetto. Near the saint's tomb at the head of the plateau there is a large village with the market place of a "Wednesday market" (Sok el Arba') called the *Sok Sid ul Musai*. The market was in full swing as we passed, but only one or two Europeans (Spaniards) were noticed amongst thousands of natives. The chief market produce was cattle and eggs.

The Seboo plain commences at the south end of this plateau, near a well-known village, *Kária el Habbasi*, which is surrounded by a thick zareeba of prickly pear and aloes. The fields in the vicinity are intersected with irrigation streams. The *Kária* (Kaid's house), from which the village takes its name, is a large whitewashed, battlemented building in the middle of an orchard. The distance from it to the Seboo ferry is four miles, the intervening country being flat and grassy, with a large clay swamp in the centre, which is dry in summer, but a somewhat serious obstacle in heavy rains.

Rivers.—The *Wad el M'dá* is forded twice during the march; on the first occasion just beyond the camp at Kária er Ramoos, and on the second occasion about half-way. At the latter ford the banks are almost level with the water, the depth 18 inches, and the stream narrow and rapid (four feet per second), and flowing over a shingly bed. The discharge of water below the ford was calculated to be nearly 1,000 gallons per minute.

Camping Ground.—On the north bank of the Seboo; near a belt of cultivated land and close to the ferry. Half of the camp crossed during the day and was pitched on the opposite bank.

Water Supply.—From the Wad es Seboo. A very muddy water containing marked evidence of the presence of sulphates and chlorides, but with very little lime, and only traces of free ammonia and organic matter.

Along the route the best place for filling water bottles, &c. is the second ford of the Wad el M'dá. At Kária el Habbasi there are, in all probability, surface wells feeding the irrigation channels.

The few villages visible from the route were noticed to be situated nearer the river banks then on the previous marches, a fact which might be taken to indicate the absence of surface wells or springs, possibly, too, the absence of swamps.

8TH MARCH.—SEBOO FERRY TO SOK EL JUMÁ EL HAWÁFA.

Features of the Country.—The Seboo is crossed on flat-bottomed, undecked lighters (*Kárib*). Only two of them were plying, and the whole day (May 4th) and the early morning of the following day (May 5th) were required to get the camp across. After crossing the Seboo, the route is along the east end of the vast Seboo plain, known as the plain of the Beni Hassan, which extends westwards as far as the eye can reach. It is widely cultivated and populous, but devoid of trees. The mountainous country of the Riff rises on its eastern extremity, while on the south it is bounded by the mountains separating it from the Fez and Meknes plateaux.

The road after traversing a portion of this plain again touches the Seboo at the camping ground of the *Sok el Juma*.

Rivers.—The *Wad es Seboo*. This river, which is one of the largest in Morocco, has its source among the northern spurs of the Atlas, and flows into the Atlantic at Mehedīa. It is said to be navigable to within a few miles of Fez, but the natives make no use of it as a water way. It is unbridged, except where the Oujda road crosses it, about three miles from Fez.

At the ferry, on the Tangier and Fez road, it is 250 yards wide from bank to bank, and 165 yards from water's edge to water's edge. Its depth is 10 feet, and the stream is rapid. The banks are 20 feet high, steep and muddy. On the north side the river bed is deep, shelving, and clayey; but on the southern side it is shallower and more sandy.

The lighters at the ferry are very dirty. There are no planks or other form of gangway, and animals and men get into them with difficulty and with considerable danger.

Camping Ground.—On the market place of the *Sok el Juma* (Friday market), also called *El Hawáfa.* It is a dirty camping ground, close to the river, fouled by animals and the refuse of previous camps, and full of flies.

Water supply.—From the Seboo. Very muddy, and of the same character as the water at the previous camping ground.

9TH MARCH.—SOK EL JUMA TO SIDI GUEDDÁR.

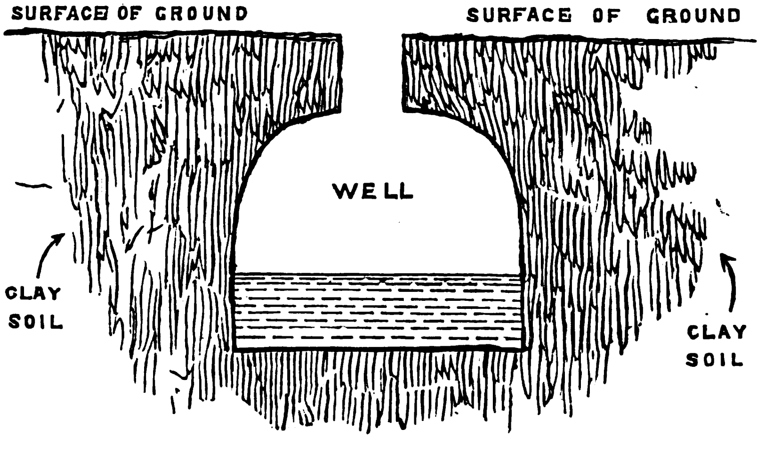
Features of the Country.—The road continues southwards and crosses that portion of the Seboo plain, which lies between the Wad es Seboo and its tributary the Wad er R'dem. The land is extensively cultivated, growing heavy crops of wheat and barley. In fact, the whole plain is an enormous cornfield, the soil being a rich argillaceous soil, well suited for the growth of such crops. The villages are permanent villages (*dchár*) as contrasted with the *douar*, or tent villages, which we had up to this point been accustomed to see along the route. The huts are of mud and thatched.

Rivers.—None crossed on the march. The *Wad er R'dem*, near the camping ground, rises in the plateau near Meknes, and flows through a wide valley in the mountainous district of the Zarhoon and Beni Aamar country to the Seboo plain. At Sidi Gueddár it is about 15 yards wide, 3 to 4 feet deep, very muddy and sluggish, and with high clay banks.

Camping Ground.—In the midst of wheatfields, about half a mile from the village of Sidi Gueddár; a large village situated on the eastern bank of the R'dem.

Water Supply.—From the Wad er R'dem. The water from this river is very suspicious, and requires careful boiling and filtering. It contains a large amount of organic matter, and in fact receives all the refuse of Sidi Gueddár and of another village, Shabánat, about a mile higher up stream. Clothes, men, and cattle are washed in it. The regular watering place is at a ford just below the villages, the worst possible place that could be selected. Much to their dissatisfaction the water carriers were made to collect the water for the camp at a spot above the village of Shabánat.

Some villages were passed along the route, which derive their water from surface wells of a peculiar construction. A hole, shaped like a bottle, and varying from 10 to 20 feet in depth, is dug in the soil, as shown roughly in this section. These walls are without any protection whatever from surface



Section of Wells in Beni Hassan Plain.

washings. The mouth is simply a hole in the ground, as often as not placed on one side of the main track. As may be imagined, the water is not only bad in quality but deficient in quantity. It is, however, the only kind of water obtainable at those villages on the Beni Hassan plain which are not situated on the banks of rivers or streams.

10TH MARCH.—SIDI GUEDDÁR TO BÁB CHOOKA.

Features of the Country.—A short march across the plain leads to the commencement of the hilly country lying between the Beni Hassan plain and Fez. To the south-east the peak of the J'bel Salfas (or Tsalfatz) forms a prominent landmark. Báb Chooka, or the "Gate of the Owl," is the name given to a gap in the hills, through which the main road between Fez and Rábat passes on to the Seboo plain. The Tangier Road keeps to the east of this gap.

Rivers.—None.

Camping Ground.—In a hot enclosed valley at the entrance to the hilly district; and to the east of Báb Chooka. The soil is parched, cracked, full of centipedes, and crops of barley are grown upon it. It was by no means a good place for a camping ground, and there were much better sites on the slopes around.

There are a few villages and much cultivated land in the neighbourhood of Báb Chooka. Instead of the usual *zareeba* of aloes and prickly pear these villages are surrounded by a trench 6 feet deep and 3 feet wide at the mouth, and flocks of sheep are kept within the enclosure. The huts are conical-shaped and thatched.

Water Supply.—From a small, sluggish, surface stream passing down the valley. It is of the poorest description, and there was much difficulty in getting a sufficient supply. Indeed, water suitable for drinking could only be obtained by following up the stream for a mile and a half to a spot where it is more rapid and clear. Later on in the season it is dry.

About five miles distant, at the head of a valley running eastwards, the peak, called J'bel Salfas, rises to a height of 3,000 feet above sea level. It is of stratified limestone formation, and contains many mineral springs along its base and spurs. The most interesting of these is the *Ain Karma* (or spring of the fig-tree) found near the base of its western slope at an elevation of 600 feet above sea level. It is reached from the Báb Chooka by a track running up the valley or along the top of the neighbouring slopes on the south. There are two or three villages in the neighbourhood of the spring, and its presence can be detected by the strong smell of sulphuretted hydrogen, which is perceptible at a distance of several hundred yards.

The spring itself is a deep limpid pool in a limestone basin, covered with a deposit of sulphate of iron, which becomes oxidised on exposure to the air and blackens the rocks around. The temperature of the spring is 76° F. A small quantity of the water was taken to Gibraltar and kindly analysed for me by Mr. G. Abrines, F.C.S., about four months afterwards. The following were the mineral constituents of the sample:—

Silica, Fe_2O_3, &c. - - -	·770	grs. per gallon.
Lime - - - - -	11·289	„
Magnesia - - - -	4·238	„
Alkalies, calculated as Na_2O -	63·838	„
Chlorine - - - -	63·700	„
Sulphuric anhydride - - -	4·807	„
Carbonic acid - - -	20·552	„
Total - - -	169·194	„
Less O=Cl. - -	14·354	„
Total mineral solids -	154·840	„

11th March.—Báb Chooka to Segota (Kaid Umbarak).

Features of the Country.—The road rises through low undulating hills to an elevated plateau on the southern spur of the J'bel Salfas. No villages are passed near the road.

Rivers.—None.

Camping Ground.—On a plateau, 1,300 feet above sea level, about 400 acres in extent, and to the east of the main route. It is exposed to breezes from every direction, and, although the soil is somewhat clayey, parched, and cracked, and grows thistles in abundance, it makes a magnificent camping ground.

The J'bel Salfas peak rises about five miles to the north-east. On the south-west the plateau is connected by a ridge, called the Pass of Segota, with the Beni Aamar and Zarhoon ranges, which separate the valley of the R'dem from the valley of the M'kis river. A road to Meknes runs along the western slope of these ranges, and is a good riding track. About eight miles south of Segota it passes the interesting Roman remains of *Volubilis,* called by the Moors "El Ksâr Pharoon." These ruins are only two miles distant from Mulai Idris, a wild and romantic fastness, situated amongst thick olive groves on a rock at the head of a dark ravine, which is formed by the junction of the Beni Aamar and Zarhoon mountains. This town is held very sacred by the Moors. A "city of refuge," it is the abode of cut-throats and robbers, and it is said that no Christian has ever entered it. The R'dem Valley, on the western boundary of which these places are situated, is wide and well cultivated, but no other villages are visible, with the exception of one or two on the road shortly after leaving Segota.

Water Supply.—From clear springs. Numerous limestone springs are found in the neighbourhood of Segota. The most important are the following:—

(1.) A spring, about a mile from the camp, below a large village and market place, the Sok er Athnein (or Monday market), situated on the northern slope of the J'bel Salfas Spur.

(2.) A spring below the southern edge of the plateau and about 300 yards east of the main road as it descends from the pass on the way to M'kis. A track branches off to it from the main road just below the camping ground. There is a small village above it, and below it lies the Kária, or house of the Kaid Umbarak, surrounded by trees.

(3.) A series of springs along the road to Volubilis. They are, however, some distance from the camp, the last of them, which is also the largest, being at least four miles distant.

A clear stream of considerable size flows to the R'dem from the gorge in which Mulai Idriss is situated. It is said to have its source in large springs at the head of the gorge.

The limestone spring, noted under (2), is tepid, and a sample analysed by Mr. Abrines gave the following mineral constituents:—

Silica, Fe_2O_3, &c. - - - -	·467	grs. per gallon
Lime - - - - - -	9·068	,,
Magnesia - - - - -	1·143	,,
Alkalies, calculated as Na_2O - -	4·305	,,
Chlorine - - - -	2·520	,,
Sulphuric anhydride - -	·881	,,
Carbonic acid - - - - -	12·073	,,
Total - - - -	30·457	,,
Less O = Cl. -	·567	,,
Total mineral solids -	29·890	,,

This water resembles the water in the springs of Fez, an analysis of which will be found under the special notes upon that city.

12TH MARCH.—SEGOTA TO M'KIS.

Features of the Country.—The whole of this march is over a series of hills and valleys. The Beni Aamar mountains rise immediately on the right (west) of the road. They are rugged and wild, of stratified limestone formation with an almost perpendicular dip in parts. About half way two towns of considerable size are seen perched high up on the mountain on opposite sides of a wooded gorge, from which a stream flows to vineyards and olive groves beneath. These towns are the dwelling-places of the Beni Aamar tribe, from which the range takes its name.

Towards the end of the march, and as the Wad M'kis is approached, the valleys become narrower. The river is crossed by a good single-arched stone bridge, on the other side of which is the marketing place of the Sok el Athnein; a flat grassy piece of ground, usually occupied as a camping ground. The march was continued beyond the Sok for a mile and a half, and the camp pitched near the river bank higher up.

Rivers.—The *Wad M'kis* is a large river flowing from the Fez plateau through a somewhat narrow winding valley to join the Seboo at a point south of the J'bel Salfas range. The district through which it passes is rich in minerals, and consists to a considerable extent of salt hills, with the hot sulphur spring of Mulai Yacoob (*see* notes on Fez) in their midst. Near the camping ground the M'kis is about 20 yards wide, rapid and turbid, and with low muddy banks.

Along the route two or three streams are crossed flowing from the Beni Aamar range eastwards. They are turbid, and not to be depended on as a good source of water.

Camping Ground.--On a small uncultivated field, with the river on one side and the main road on the other. Close to it the dried up bed of a stream entering the M'kis attracted attention in consequence of its containing a thick white deposit of common salt, indicating the neighbourhood of the salt hills on the east.

Water Supply.—From the Wad M'kis; a turbid water, containing a considerable quantity of chlorides and magnesia, but only slight traces of lime sulphates and organic matter.

There is no other water supply along the route with the exception of the streams from the Beni Aamar range, mentioned above.

13TH MARCH.—M'KIS TO THE N'ZALAH FARÁJI.

The first part of the route passes along a bleak desert tableland surrounded by low hills, and notorious for its highway robberies. The road passes from it on to the plain of Fez. It runs eastward along the northern end of the plain towards a prominent peak rising about six miles distant, and concealing from view the eastern boundary of the plain, where the city of Fez is situated. Two small lakes, the haunt of numerous wild duck and surrounded by swampy soil, are skirted near the base of this peak, and one or two villages are passed near them.

Rivers.—None are passed, but the *Wad el Fas* is touched at the camping ground of N'zalah Faráji.

Camping Ground.—On the southern base of the peak, mentioned above, and in sight of Fez. The camp was pitched on a grassy belt of land between the road and the river. The peak rises, immediately to the north of the road, to an elevation of 2,500 ft. above sea level, and forms the western extremity of a range of slopes extending from Fez.

Water Supply.—From the *Wad el Fas*, a stream of considerable size, having its source in an enormous limestone pool, the *Rás el Ma*, formed about six miles from the camp in the centre of the plain. Its water contains a large puantity of lime.

14th March.—N'zalah Faráji to Fez.

A short march along a sandy road lying between the river and the slopes of the J'bel Guib-Guib on the north. The latter part of the road skirts the northern wall of the *Dár Maghzen* or Sultan's Palace, and enters the city by the Bab Segma. There are several camping grounds outside the city, both on the sandstone slopes to the north and on a grassy meadow between the road and the river.

The Wad el Fas enters the city by a channel diverted so as to pass through the grounds of the Palace, and is from there distributed to the town below.

Details of Fez, its surroundings and water supply, will be found under heading III.

Itinerary Notes.

B.—Fez to Rabat.

(*Table of Route.*)

Date of March.	Name of Camping Ground.	Estimated Distance from last Camping Ground.	Estimated Distance from Fez, by direct Route.	Estimated Elevation above Sea-level.	Nature of Camping Ground.	Source of Water Supply.
		Miles.	Miles.	Feet.		
July 12th	Rás el Ma - - -	10	10	1,200	Stubble field -	Limestone spring.
„ 13th	Halt - - - -	—	—	—	- - - -	„ „
„ 14th	Halt - - - -	—	—	—	- - - -	„ „
„ 15th	M'kis - - - -	16	20	600	Stubble field -	River M'kis.
„ 16th	Segota - - - -	16	36	1300	Plateau - -	Springs.
„ 17th	Halt - - - -	—	—	—	- - - -	„
„ 18th	Ben el F'keh - -	22	58	200	Stubble field -	Shallow surface stream.
„ 19th	Meshra er Rimla -	30	88	50	Meadow nr. marsh	Meadow stream.
„ 20th	Bīr Rammee - -	20	108	350	Slope above swamp	Swampy lakes.
„ 21st	Salee (Rabat) - -	20	128	Sea level	Sandy beach -	Rain-water tanks and springs.

1st March.—Fez to Rás el Ma.

Features of the Country.—As far as N'zalah Faráji the road is the same as on the 14th march from Tangier to Fez. Shortly after leaving that camping ground it bears to the south till it reaches the Wad El Fas again, about four miles further on, at a point where the limestone rock which underlies the plateau appears on the surface. It then keeps near the bank of the river, traversing somewhat uneven ground, till it reaches the Rás el Ma pool. An old fort rises on the south bank of the pool, and acts as a landmark. There are one or two small villages in the neighbourhood, but they are some distance from the road.

Rivers.—The *Wad el Fas* lies immediately to the south of the route the whole way, and has its source in the Rás el Ma.

Camping Ground.—A stubble field, about 200 yards from the pool, in a somewhat damp hollow. The dampness is caused by numerous springs, which form into small surface streams in the neighbourhood. There is, consequently, a difficulty in getting a thoroughly satisfactory camping ground near the pool.

The country round about is said to be malarial, and the inhabitants of one of the villages, Shazár, or "the trees," suffer greatly from enlargement of the spleen.

Water Supply.—From the *Rás el Ma*, or "head of the water"; a magnificent pool of clear limpid water in the centre of the Fez plateau, about 1,200 ft. above sea-level. The water pours forth like a subterranean river into a large limestone basin, very similar to the pools met with in Cashmere; as, for example, the pool forming the source of the Thelum at Vernág. At one point only the discharge of water was calculated to be 50,000 gallons per minute. The water is clear and sparkling, free from any form of organic impurity, but containing chlorides, lime, and sulphates in marked quantities. Within a few miles radius of the Rás el Ma there are several other limestone springs, but none equal to it in size or importance. The largest of these is the "Ain Zurak" ("blue spring"), situated about 16 miles from Fez, and three miles north of the main route between it and Meknes. These springs are remarkable for their clearness, and for the sparkling nature of their waters. A sample of the Ain Zurak water was analyzed and found to contain as much as 14·014 grs. per gallon of free carbonic acid out of a total of 21·560 grs. per gallon. The sample was collected by Lieut. Kirkpatrick, R.E., while he was exploring the country between Fez and Meknes.

2ND MARCH.—RÁS EL MA TO M'KIS.

Features of the Country.—The road traverses the plain northwards towards the hills to join again the Tangier road. The surface of the plain is uneven, and the soil sandy, and covered with grass and palmetto. After leaving the Fez plateau the road lies along the table-land, mentioned in the 13th march between Tangier and Fez, and joins the Tangier road near the M'kis end.

Rivers.—Several large streams flowing from limestone springs are passed in the Fez plateau, the largest of them being one of the sources of the Wad M'kis.

Camping Ground.—A stubble field on the right of the road, and close to the bridge across the M'kis. The market-place of the Sok el Athnein lies on the other side of the road, and, although it is the usual camping ground, it was too dirty for occupation.

Our old camping ground (see 13th march, Tangier to Fez) had been converted into a rice field, under irrigation. Indeed, a considerable portion of this part of the M'kis valley was found under irrigation on the return journey.

The stubble on the camping ground was very long, owing to a custom the natives have of cutting the corn close to the ear. It was as dry as tinder and the camp might readily have been set on fire had the precaution not been taken of clearing it away from around the kitchens and tents.

Water Supply.—From the Wad M'kis; already described in the notes of the 13th march between Tangier and Fez.

The springs and streams along the route, as it crosses the Fez plateau, are clear and pure, and water-bottles, &c. should be filled at them or at the Rás el Ma before starting on this march.

3RD MARCH.—M'KIS TO SEGOTA.

This is the same march as the 12th between Tangier and Fez. We found the camping ground parched and cracked but refreshingly cool at night. The limestone springs, both near the camp and on the road to Volubilis, which I visited a second time, were much diminished in size, but sufficient water could be obtained from them all.

4TH MARCH.—SEGOTA TO BEN EL F'KEH.

Features of the Country.—This is a long, hot march. The first part of the road has already been described in the notes of the march from Báb Chooka to Segota. It leads on to the Beni Hassan plain through the sandstone cutting in the hills called Báb Chooka. After entering the plain the route turns to the left and shortly afterwards crosses the Wad er R'dem at a large village, Sidi Kassim (or Mogrīna), situated on its western bank. From this village to Ben el F'keh it traverses extensive cornfields, now dried and parched. The village of Ben el F'keh is on a slight elevation on the plain, but, with this exception, there are no landmarks, nothing but a vast plain stretching as far as the eye can reach to the lofty Riff Mountains on the east and the Zemoor district on the south. On the north and west the plain is lost on the horizon line.

Rivers.—The *Wad er R'dem*, at the ford at Sidi Kassim, is 15 yards wide, up to the hocks in depth, and flows over a sandy bed. When the water is undisturbed it is clear, but the banks are high and muddy as at Sidi Gueddár lower down stream (*see* 10th march, Tangier to Fez).

Ths shallow surface stream from which the water supply had been obtained, when the camp was pitched at Báb Chooka, was dried up and its bed contained only a few green muddy pools full of frogs.

Camping Ground.—A stubble field on the western slope of the elevation, where the village of Ben el F'keh (*son of the scribe*) is situated.

Water Supply.—A small surface stream almost dried up, meandering along at the bottom of a deep cutting below the camp. It is apparently the only source of water supply and totally insufficient for a large camp. A certain amount of clear water was collected by digging a hole in the bottom of the stream and allowing the mud to settle.

Water, which had been carried from Rás el Ma and Segota, had to be distributed.

Along the route the Wad er R'dem at Sidi Kassim is the best and only source of water supply. The quantity of water there is unlimited, and the quality fairly good.

5TH MARCH.—BEN EL F'KEH TO MESHRA ER RIMLA.

Features of the Country.—The road continues along the plain for the whole of this long march. The first half is along stubble fields and over a dried-up clay soil covered with thistles; but at a village situated about half way, and named Lallah Ito, the soil becomes sandy and is covered with a creeping, succulent grass, like the Indian *doob* grass. Occasional dried up swamps are passed, but, generally speaking, the sandy soil continues to the end of the march.

About 4 miles from Ben el F'keh the Wad el Bet is forded at a large village called Walad Khel or Walad Basha. This village and Lallah Ito, recognised by its saint's tomb, are the only permanent villages (dchárs) along the route. Several Arab tent villages are, however, visible. They are the dwellings of the Beni Hassan, a tribe famed as horsemen and robbers and of the purest Arab descent. They are wild, hardy, determined-looking men, mounted on good horses and armed with matchlocks and scimitars. Their *douars* are always pitched in a circle, forming an enclosure in which herds of sheep and cattle are secured.

Rivers.—The *Wad el Bet*; forded at Walad Khel, is a considerable stream with high clay banks and shingly bed. It is 40 yards wide at the ford and up to the hocks in depth. The current is moderately rapid and the water clear when undisturbed. This river rises in the district round Meknes and skirting the Zemoor country, flows along the Beni Hassan plain to lose itself in the swamps near the Seboo river and the camping ground at Meshra er Rimla.

At *Meshra er Rimla* there is a sluggish meadow stream, winding through sedges, to the swamps just mentioned. The banks of this stream are low, sometimes of clay and at others of a peculiar red sand, from which the camping ground, literally meaning "the ford of the bit of sand," derives its name.

Camping Ground.—A meadow on the banks of the stream. Immediately to the north of this meadow an extensive marsh commences. About 5 miles to the south the ground rises and is covered with the cork oaks of the Mamūra forest, a vast unexplored district lying between Meknes and the coast and inhabited by the wild and independent Zemoor tribe. The camping ground, in consequence of the proximity of this tribe, is considered very unsafe

Horses are constantly stolen from it and it was here that the Zemoor made a raid upon the Sultan's camp in 1891 and carried away the trappings of the elephant presented to him by the British Government.

Two large tent villages, belonging to the Kaids el Arbi and El Habashah of the Beni Hassan tribe, are pitched near the camping ground, and large herds of horses and cattle belonging to them graze around.

In consequence of its proximity to the marshes this camping ground is by no means satisfactory. Heavy dews fall during the night and the mornings are cold and chilly. Mosquitoes swarm and are more numerous and vicious than any experienced elsewhere.

Water Supply.—From the meadow stream at the camp. The supply is sufficient in quantity for large camps, but the quality is doubtful; the water being turbid and having the characters of marsh water. Water from the Rás el Ma and Segota springs was again distributed to the members of the mission.

Along the route the best water supply is from the Wad el Bet. Water collected from it above the ford and village should be of fairly good quality and the quantity is unlimited.

The water supply at Lallah Ito is deficient in quantity and bad in quality. It is drawn from clay holes similar to those described in the notes of the 9th march between Tangier and Fez, and is considered barely sufficient for the village itself.

There is absolutely no other source of water along this march. Water melons are sold at booths along the route, and probably aid in alleviating the thirst of wayfarers.

6TH MARCH.—MESHRA ER RIMLA TO BÎR RAMMEE.

Features of the Country.—For the first 8 miles the road traverses marshy ground, at present dried up, until it reaches Sidi el Aishe, two saints' tombs on a knoll marking the termination of the Beni Hassan plain. The soil during this part of the march is clayey and bears evidence of being an extensive swamp in rainy weather.

Eight miles from Sidi el Aishe the road strikes the Seboo river, the country traversed being undulating, and the soil sandy with occasional clay hollows.

A stream of considerable size runs into the Seboo, where the road meets it. This stream is bridged, and a large village near it derives its name *El Kantara* ("the bridge") from this fact.

Two miles further on a small flat valley is entered. At one end of it there is a village, at the other a shallow lake or swamp, which the camp followers declared to be Bîr Rammee, and in consequence they proceeded to pitch the camp on its bank.

Rivers.—The stream at Meshra er Rimla is forded just after leaving the camp. In rainy weather it would be a deep and somewhat difficult ford to cross.

The *Seboo* at El Kantara is 200 to 300 yards wide, and forms an enormous loop or bend some miles in length with its convexity looking southwards. The banks are low and sandy and the current deep and rapid.

Camping Ground.—The tents were removed from the spot where the camp followers had pitched them to a dry sandy slope covered with grass and low scrub 200 to 300 feet higher up. The dews were very heavy again during the night, and the mosquitoes troublesome.

The undulating hills on the west of the camp are extensive and dry, and command a magnificent view of the mouth of the Seboo and the sea at Mehedia about 5 miles distant. Immediately above the camp there is an excellent camping ground exposed to the refreshing and exhilarating sea breezes, but unfortunately the water supply is unsatisfactory.

Water Supply.—From the swampy lakes below the camp. Rás el Ma and Segota water had again to be distributed.

Along the route no water can be obtained anywhere, except at El Kantara from the Seboo and stream running into it.

7TH MARCH.—BĪR RAMMEE to SALEE (RABAT).

Features of the Country.—The march is over undulating grassy downs, at present parched and dry, but exposed to delightful cooling sea breezes.

The country becomes flatter as the road approaches Salee, which is entered through three large arches in a high wall of great extent stretching straight across the northern boundary of the town. After traversing clean and wide streets the road emerges on to the sandy beach at the mouth of the Boo Ragra river, where Rabat is situated.

Rivers.—None are passed on the route.

The *Boo Ragra*, which separates Salee from Rabat, flows into the Atlantic in a somewhat narrow estuary, but has extensive swampy banks higher up stream. It is crossed by a ferry.

There are sand bars outside the estuary which render embarking and disembarking both difficult and dangerous.

Camping Ground.—On the sea beach near the ferry.

Water Supply.—At Salee the water is said to be obtained from good inland springs, but there was no opportunity of investigating this source.

Along the first part of the route there are two or three good wells any one of which may be the real Bīr Rammee, or the "well of the huntsman." It is almost certain that the previous camp was not the Bīr Rammee of Kaid Maclean's Itinerary.

Of these wells the following were named to me by the natives of the district:—

(1.) *Es Sániya*, about three or four miles from the camp, and by the side of the road near a garden of fig trees.

(2.) *Bīr Rammee*, a mile or two beyond *Es Sániya.*

(3.) *Bīr el Hensha*, eight miles from Salee. This is the best of the three, and is a good well sunk in sandstone. It contains clear and sparkling water, and is, I believe, the real Bīr Rammee, as it most nearly answers the description given by Kaid Maclean of that well, both in regard to its distance from Salee, and the character of its water.

In the towns on the coast, and probably, therefore, in Rabat, a considerable quantity of rain water collected from the roofs is stored in tanks (*mehfeeyah*).

There was no time or opportunity for noting the sanitation of Salee and Rabat. The climate of the latter is said to be delightfully cool all the year round, but the town has the reputation of being full of enteric fever. Intermittent fevers are also said to be very prevalent in the country around.

Salee is considered much more healthy, but the inhabitants are fanatical and no Christian is allowed to reside there.

III. SANITARY NOTES ON FEZ AND ITS SURROUNDINGS.

The plateau, upon the eastern edge of which the city of Fez is situated, is about 1,200 feet above sea-level, and runs east and west. It is known as the "plain of Fez," and is 15 miles across at its widest part, and 30 miles long. It is bounded on the south by the hills of the Beni M'tīr and on the north by the Zalágh and Zarhoon ranges, which separate it from the plain of the Beni Hassan. At its eastern extremity it narrows and dips to the valley of the Wad el Seboo, and at its western limit it joins the plateau of Meeknes, which stretches to the Wad el Bet, where it is coterminous with the forest country of the Zemoor.

Except on the north, all these districts are practically unexplored, as they are inhabited by wild and independent Berber tribes.

The geological formation of the plateau is limestone, but sandstone quarries and caverns are found on the north of the city. The soil is sandy throughout its greater part, and overlies the limestone in a thin stratum; but towards Fez, and on the banks of the Wad el Fas it is deeper and more argillaceous, while on the south and east there are beds of porcelaineous clay, out of which the renowned Fez pottery and tiles are manufactured.

The Zalágh mountain rises abruptly to the height of nearly 3,000 ft. above sea level beyond a ravine on the north of the city. It has a stratified limestone formation, with an almost perpendicular dip on its southern face.

On the southern side of Fez, and separated from it by another ravine, there are low undulating hills, richly cultivated. The plateau itself is uneven and barren, but springs of clear limpid water abound, sometimes gushing forth into limestone basins, at others pouring over the surface of the plain in rivulets which run in every direction to find there way eventually into the Wad el Fas. This is especially noticeable in the vicinity of the Rás el Ma and the Dár el Biber, the former 10 miles, and the latter about 3 miles to the south-west of the city.

The plateau is barely one mile in width at its eastern edge, where Fez is situated. The Wad el Seboo runs in a northerly direction in a valley about three miles distant, and 600 feet lower. The dip to it is somewhat abrupt, and forms on the south a deep ravine, alluded to above as the ravine separating Fez from the cultivated undulating hills on the south. The Wad el Fas pours into this ravine over a rocky fall, and following its course trends northwards through the lower part of the town, and, after emerging from it, joins the watercourse of the ravine on the north, and then turns eastwards again to the Seboo. The tongue of land from the edge of the plateau to the junction of these watercourses forms the site of the city of Fez, and the dip being, as already stated, somewhat abrupt, the entire portion of the lower or old town of Fez lies below the plateau, and is invisible to anyone approaching the city from the west. Indeed, the Sultan's palace and its surroundings, which form the new town, are the only portions of Fez situated on the plain.

I am aware of the difficulty of adequately describing this site, a difficulty recognised by most who have attempted it. (Cp. Rohlf's " Adventures in Morocco," page 123.) It can only be grasped by a recognition of the fact that Fez, instead of being built on the plain, as is generally supposed, is really on this sloping tongue of land between the two ravines which unite together below the town to form the valley opening on the east into the valley of the Seboo, but enclosed by the Zalágh mountain on the north, and the undulating hills on the south. (*See* plan, Appendix V.)

The chief characteristic of this tongue of land is the number of springs which it contains. Their presence probably gave it in the eyes of Mulai Idriss, reputed founder of the city, a utilitarian as well as a sacred character, and led to its selection as a suitable spot for erecting a mosque. The city came afterwards.

Fez is divided into two towns, Fez Jedīd or new Fez, and Fez Bāli or Qadīm (old Fez). The latter is also called the Medīna, or Moorish town in distinction from the Mellah or Jews' quarters, which is situated in Fez Jedīd. The whole area is surrounded with high battlemented walls of moulded clay mixed with chalk and cement.

Fez Jedīd consists principally of the Dár Maghzen, literally meaning "the house of Government," or Sultan's Palace, where all affairs of state are conducted. The arsenal (machīna) is attached to it, and the remainder of the area of Fez Jedīd, covering about 400 acres, is occupied by the Kasba (cantonments) on the north, and the Mellah (Jews' quarters) on the south, enclosed within their own walls.

The Medīna is connected with Fez Jedīd by two or three long narrow streets of closely-packed houses leading from the centre of the town to the Mellah. On the south side, and between the two divisions of the city, there is a large garden belonging to the Sultan, and to the east of this within the city walls there are numerous other gardens belonging to the wealthier inhabitants of the old town.

The area of Fez Bāli is about one square mile. With the exception of the gardens, mentioned above, and a considerable space on the south-east, where the pottery works are situated, and a quantity of dry straw stacked, the whole of this area is a mass of closely-packed houses, and mosques built in irregular blocks, and intersected by a maze of narrow streets. The surface of the ground is so uneven that the streets wind uphill and down hill, and twist and turn in every direction. The principal street is not more than nine feet wide. It is called the Darb eb tueel (Long Street), and runs from the Karawīn in the lower part of the town to the Dár Maghzen and the Mellah.

Many of the streets are roofed over with matting, beams, or trellis work, over which vines grow in luxuriance, and make a pleasant shade. A few of them have names, as, for example, *Bàb es Siussila'* (chain gate), a lane leading from the *Kessaria* (exchange market) to the mosque of Mulai Idriss. None but true believers are allowed to pass along it. Another, the *Akabat el Firâd* (the ascent of the mouse), is a long narrow ascent, leading from the lower town to the gardens on the south.

But, as a rule, the locality of a house in Fez is indicated by the district (hauma) in which it is situated. There are 18 of these districts, six in each of the three sections of the city known as El Andaless, El Lanthiyin, and El A'dona. Each "hauma" is named after a mosque or trade guild. Thus there are the hauma of the Jama' Mulai Idriss, of the Karawīn, of Mulai Yacoob, as well as of the Kessarīā, Jotia (old clothes market), and the Bakok (plum market).

The mosques (*Jama'*) are numerous, but probably do not exceed the number of the districts. Their scientific interest lies in the fact that they are built around springs. Two only are of any general interest, viz., the Karawīn, and the mosque of Mulai Idriss.

It would require a special work to detail all that is known, said, or imagined about the former. Such has been already published by M. Delphin, Professor of Arabic at Oran; and it is from his book "Fas et Son Université" that I have borrowed the outline of the plan (in Appendix), in which I have endeavoured to show roughly the flow of the river through the city. Briefly, the Karawīn is the Dar 'Alem or University of the Western Mahommedans, and contains the famous Fez library, which, if it ever gets into the hands of European scholars, will probably be found much less important than has been surmised. It may be interesting to note that none of the medical sciences are taught here; religious commentaries, Mahommedan law, history, metaphysics, grammar, arithmetic, and astronomy being the chief, one may say the only subjects of scholarship. The total ignorance of the professors regarding modern science may be gathered from the fact that a geography, of which Ptolemy would be ashamed, is still used. I obtained possession of one of their text books, and in an article in a recent number of the "Fortnightly Review," Mr. Stephen Bonsal reproduced their only map, a tracing of which he obtained from this text book.

I was able to verify the astounding revelation that so simple a science as that of geography should be taught in so extraordinary a fashion. The student (Thâleb) from whom I obtained the text book was still being dogmatically taught that the world was surrounded by mountains, the J'bal Kaf, and that Juj and Majuj (Gog and Magog) still existed, and were confined to their hyperborean homes in the north. As to the position of other countries he seemed to have no idea at all. But in Morocco, the pride of race, or more correctly speaking, of religion, is great, and in the estimation of the Moor there is no country in the world like it, no city in it so great as his own city, and no individual so important as himself. It is doubtful if scientific progress is possible so long as such ideas prevail.

The mosque of Mulai Idriss is of interest, as being the most sacred of all the mosques in Fez, and jealously guarded against the intrusion of infidels. Even the surrounding streets are closed against them; and, as may be imagined, it is the abode of that fanaticism for which Fez is perhaps preeminent amongst Moorish cities.

The most artistically beautiful of the mosques are those of the Andalúz on the south-east near the potteries, and of Mulai Yacoob, at the upper part of old Fez near its junction, with Fez Jedīd. The latter is extremely old and picturesque, its pent roof and square pyramidal topped minaret resembling one of the old Christian churches. A curious sun-dial (*dulàb*) formed of 13 bowls, placed upon a line of brackets on the frontage of a house on the opposite side of the street, is worth noting. Apparently no one can explain definitely in what manner they act as a dial, but it seems probable, from their relative positions, that the minaret of the mosque throws its shadow on each bowl in succession, according to the position of the sun.

The houses in Fez are practically all of one pattern and like those of most Moorish towns. They are flat-roofed, terraced buildings with three floors, a basement (*sifli*), middle floor (*shak la Beeyah*), and upper floor (*foki*), surrounding a square or oblong courtyard (wast ed dár). The majority of them are built of moulded clay, chalk, and cement, with no woodwork, except in the doors and joists; but some have walls of burnt brick, while a few possess hewn sandstone. An average-sized courtyard is 20 feet square, but some are much larger and usually oblong. The entrance from the narrow street is invariably through a low, dark, and bent passage closed by stoutly made doors studded with bolts. The courtyard, floors, staircases, verandahs and corridors are paved, even in the poorest houses, with Fez tiles cut into various patterns, and of different colours. These tiles are manufactured and sold in 4½ inch squares, and deftly cut by the tile-layer into smaller pieces, shaped as diamonds, leaves, circles, &c., according to the pattern he wishes to form. They cost about 5 dollars per 1,000, but those coloured blue are more expensive and sell at 12 dollars per 1,000.

The rooms, on the sifli and foki, are, as a rule, similar in shape. They are narrow and long, and entered by a large arched doorway closed by immense wooden folding doors, in one of the panels of which a smaller doorway is always placed. There are usually no windows, and where they do exist they do not overlook the street. The *sifli* rooms are always lofty, but those of the *foki* are usually lower. The rooms of the *Shak la beeyah* are invariably low and small, and used for stores, kitchens, servants, &c.

The stairs are narrow and winding and awkward for anyone accustomed to European stairs, the riser of the step being about 18 inches high, and the tread unusually narrow.

Each courtyard is supplied with water laid on to a fountain or basin, which is placed either in the centre of the yard or against one of the enclosing walls. The water flows continuously out of brass or iron spouts (*Biz booz*) or taps (*Andoob*), and is intermitted only when there is insufficient head of water in the distribution basins, described below. Consequently the waste water keeps pouring without intermission, and is conducted to the floor of an adjoining closet, called the Beit el Ma or water closet, where it escapes by a slit 2½ inches × 10 inches in the floor into the drains.

During the heat of summer the people prefer the *sifli* rooms, as they are several degrees cooler than those of the *foki*; but they are, on the other hand, damp and unhealthy. The tenants of them have been noted to suffer greatly from fevers and scrofula. It is not, of course, to be expected that a trap of any kind exists to prevent sewer emanations from entering the courtyard through the slit in the floor of the Beit el Ma; and, curiously enough, the Moors have an idea that many illnesses are caused by evil spirits (*jins*), who inhabit the drains (kadoos), and enter the houses through this slit.

The rent of houses in Fez is low. A whole house, for example, such as I have just described, tiled with beautiful patterns from top to bottom, and with delicately traced and painted arabesque designs on the ceilings of the rooms, pillars, and verandahs, was rented at 13 dollars a month to a Christian.

Houses in gardens are usually pavillions instead of courtyard houses, and contain a single basement and upper floor only with half-way rooms on the staircase and kitchen and storerooms below.

The house occupied by Sir C. Euan-Smith and his staff was exceptionally well built and designed. It is, indeed, the largest and most palatial house in Fez.

This house is the only one observed by me that could be readily converted into a suitable hospital should such an occurrence as the occupation of Fez by European troops ever take place.

The houses of the poorer classes seem to be built, tiled and supplied with water on exactly the same style and principle as those of their richer neighbours; the only difference being that a poor family rents a single room, instead of the whole house.

The system of water-supply and drainage in Fez is said to be of very ancient date, and to have been constructed by a Frenchman, named Desaulties. I was able to see for myself most of the details of this system, through the goodwill of a Kadwási (drain-man), who, being a Sheref and descended from the Prophet, could take me where he liked without being questioned.

There are two kinds of water supply, the river water and the spring water. The sewerage system is in connexion with the former, and can best be described along with it.

The Wad el Fas, which supplies the river water, rises in the Ras el Ma (*see* Itinerary Notes), and is joined by another stream from the Dár el Biber on the south-west of the town. The channel formed by the junction of these two streams conveys the water to the ravine on the south of the city, and does not play a part in the distribution of water through the town. This is effected by a canal from the Wad el Fas diverting a portion of its waters into the palace enclosure, and from thence into the arsenal, where it supplies the water used in working the machinery.

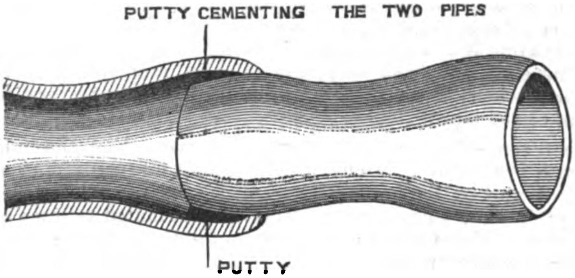
The water in this canal is distributed from the arsenal in three channels, one to each of the three divisions of Fez. At the head of each of these channels there is a mill, and in consideration of the fact that the owner has the benefit of the head of water, he is bound to maintain its distribution to the rest of the division in good order. This is done as follows:—

The channel is dammed by a wall of lime concrete, just above the mill and within its precincts. Along this dam there are three or four large earthenware bowls, into which the river water is allowed to enter, and be distributed in various directions by pipes leading out of them. The mill itself is worked by water led from the dam by wooden troughs to a wheel turning in an horizontal plane underneath the floor where the grinding stones revolve. The inlets to the pipes leading from the distribution bowls or basins are protected by iron gratings divided into 1½″ squares. These pipes lead to the various districts or "hauma," and are there further distributed through other mills or by means of fresh distribution basins, placed in every conceivable position. Thus, I have seen one of these basins under the surface of the street protected simply by a disused mill stone, and often, in the lower part of the town, one may observe basins placed in the outside wall of a house about 10 feet above the street level, the water being raised to them by the hydraulic pressure of the descending column in the pipes above.

The final distribution of this water to each house is by means of a distribution bowl in the precincts of a set of these houses, with channels from it leading to the fountains in the courtyard of each house, where the water pours continuously, as already noted, through open spouts or taps.

In addition to being distributed in this manner to each house in the city the river water is also conducted to fountains in the streets, and the continuous flow of water everywhere gives one, on first entry into Fez, the impression that it is a city of gushing streams.

The conducting pipes are earthenware and of a peculiar, irregularly, cylindrical shape, as shown in the accompanying diagram.



An average size of pipe is 16″ long by 8″ outside diameter at broad end, and 6″ at narrow end, but the pipes are made of several sizes. The narrow end is surrounded with putty made of lime, oil, and the noils of flax (*shtib*), and then fixed into the broad end of the pipe below (*see* diagram).

These pipes are laid at various depths beneath the level of the street, and apparently always along the side of the street and not the centre. One trench, which I saw open, was four feet deep, and the pipes were being laid on a bed of concrete; but at other places I have seen them almost on the surface.

This system of distributing water to each house seems very complete, but at times the pressure is low, especially when a greater head of water than usual is required for the arsenal machinery. On such occasions the tenants of the three houses, supplied from a common distribution basin, have the sense to plug up two of the three outlet channels in turn, so as to increase the pressure and render it sufficient to supply one house at a time.

The system is apparently under no government or municipal control except at the arsenal, and the whole arrangement of distribution basins, pipes, &c., is maintained by independent tradespeople, such as the millers and Kadwási (drain men), who make their living by attending to the distribution channels and drains, that is to say, that if the pipes become blocked or out of order in any way, the tenants of the houses, who suffer in consequence, combine and employ one or more Kadwási to put them right. The millers keep the distribution basins in the precincts of their mills in order, otherwise they lose their customers.

This river water constantly forms lime concretions in the channels, and blocking is very common in consequence. The Kadwási remove these concretions by working iron chains up and down through each section.

The removal of sewerage and refuse is connected with the river water supply, and depends upon the abundant and continuous flow of water from the mills and houses as well as upon the rapidity and depth of the torrent in the river itself, as it trends through the lower part of the town.

As already described, the waste water flows constantly from the houses into drains commencing at the narrow slit in the floor of the waterclosets. Slops, excreta, &c. all pass through this slit, and are conveyed from the house by square brick channels, running under the basement, to a large arched sewer, also of brick, called the *Boo Kharareb*, or Father of Refuse. This Boo Kharareb is a main sewer of large dimensions, sometimes flowing in an open stream. It emerges from the city through a large arched tunnel, whence it is continued under the appropriate name of the *Wad el Kháib*, or "River of Filth," to join the Wad el Fas and the Seboo. The state of this sewer can best be described in the words of my Kadwási guide:—"The dirty parts," he said, "you would not like, were you to see them, and the clean parts would drown you."

Much refuse from the streets and houses is shot into the more rapidly flowing sections of the Boo Kharareb through open gullies placed at the side of some of the streets. They are simply holes in the street with the torrent rushing below.

I was told that the house drains passed at a lower level than the water pipes. In a street near the Karawin, however, I observed Kadwási men at work, where they had dug a trench for the water pipes and had left a house drain running across it just below the level of the street; an exceedingly dangerous relative position when one remembers that neither channels are water-tight.

The river water in any case ought never to be used by strangers. The natives themselves avoid it as a rule both for cooking and drinking. Men and animals wash themselves and their trappings in it at every available spot before it enters the precincts of the distributing mills, where for the first time it is conducted in closed pipes.

Spring Water.—Fortunately, springs exist everywhere throughout the area upon which Fez is built. Many of them bubble into concrete or marble basins in the courtyards of the houses, but the majority are within the precincts of the mosques. The water of these springs is distributed to some of the houses in the neighbourhood and to fountains in the street by pipes similar to those conducting the river water.

The spring water is exceptionally clear, limpid, and sparkling, but for some reason or other the basins of the springs are kept filled with sawdust. The explanations of this are so contradictory that one is puzzled to get at the true reason. For example, one reason given is that the sawdust prevents concretions forming in the pipes; another that it blocks up the holes should a leak occur; and a third, that it indicates the position of a choke; that is to say, that when water containing sawdust wells out on the surface of the street, the Kadwási men know that they have to deal with a choke in the spring water and not in the river water pipes. I believe that the last reason is nearest the truth, and that the sawdust is intended as a means of generally distinguishing between the two kinds of water. The inhabitants of Fez note several points of distinction between them, a fact which shows that they take a deep interest in the different qualities of each. My friend the Kadwási informed me that the concretions from the river water were most troublesome, and so far as I myself observed they certainly formed rapidly on wood, stone, and earthenware. The spring water, on the other hand, acted, so he asserted, in exactly the opposite manner, and corroded the earthenware pipes or the joining cement. These phenomena touched him deeply, and he wondered whether the river water caused concretions in the stomach as it did in the pipes, and whether if it were mixed with spring water a balance would be struck, and the pipes neither blocked by concretions nor corroded.

I took some samples of the Fez spring water to Gibraltar. Mr. Abines kindly analysed them for me, and has, therefore, the credit of being probably the first who has been able to state definitely their mineral constituents. They are in no way peculiar or important, but so much is heard about some being strong and others mild mineral waters that it may be as well to give the detailed analyses. Their one peculiarity is that they contain much less lime than the springs of the neighbouring plateau, and probably come from the sandstone stratum, which is seen in the vicinity of the northern gates of the city.

TABLE of the Analysis of some of the Springs in Fez.

Name of Spring.	Ain Sidi Talook.	Ain Bisbas in the Jama' Qafezzin.	Ain Raseef.	Ain Astiflyoon in the Karawin.	Spring in a Private House.
Mineral Constituents.	Grs. per gallon.	Grs. per gallon.	Grs. per gallon.	Grs. per gallon.	Grs. per gallon.
Silica, Fe_2O_3, &c.	·910	1·820	·210	·980	·980
Lime	8·585	7·918	7·762	8·101	8·585
Magnesia	4·742	4·541	4·414	3·910	4·213
Alkalies as Na_2O	6·198	6·774	6·013	6·310	6·774
Chlorine	5·880	6·160	5·600	5·880	5·810
Sulphuric Anhydride	·964	·889	1·154	1·106	·721
Carbonic Acid	14·366	12·836	11·949	11·438	11·333
Total	41·645	40·938	37·102	37·725	38·416
Less O = Cl.	1·325	1·388	1·262	1·328	1·316
Total minerals	40·320	39·550	35·840	26·400	37·100

All these springs are, therefore, practically alike, so far as their mineral constituents are concerned, and contain a comparatively small quantity of lime. A sample collected from the spring of the Sidi Firáj was also analysed with a view to estimating the quantity of free carbonic acid present. The result was 11·550 free CO_2 and 9·548 combined CO_2, the total being 21·098 grs. per gallon. Most of the spring waters in Fez may be reckoned to contain a similar amount of free CO_2.

There are public baths, called "Dár Nodo" or "Hammám" near several of the mosques. They consist of a simple unfurnished room with a tiled floor. The water is supplied to the bathers in buckets, hot or cold, as desired; and their bodies are scraped with body scrapers made of Berlin wool. These scrapers are passed from one to the other indiscriminately and probably help greatly in spreading the skin diseases, which are so prevalent in Fez.

There also also in Fez public urinals, called "M'táha," similar to the Beit el Ma of the private houses. They are supplied with a constant flow of river water.

Of the public institutions in Fez the *Sidi Firáj* was the only one I was able to visit. In the accounts of the city by Leo Africanus and by the author of *Roudh el Kartas,* an Arabic work of the 14th century, which has been translated into French, it is known as an hospital for the treatment of sick, supported by charities and rich endowments. Rohlfs speaks of it as a lunatic asylum and gives a ghastly description of its condition; but I doubt if he ever visited it. I had given to me exactly similar descriptions and at the request of Sir C. Euan-Smith endeavoured to obtain permission to enter it. After many promises of an escort, which never arrived, I eventually decided that the only way of succeeding was to go there openly. This I did, and fortunately met with no opposition, having been permitted to enter quietly and see the whole of the interior.

The Sidi Firáj is certainly no longer an hospital for the treatment of the sick in any sense of the term. The building is situated a short distance from the principal street, close to the Jama' Mulai Idriss. The entrance is a large doorway in the Fákhareen or place of the vendors of henna, a small arcade covered with the branches and leaves of an enormous vine, said to be the largest in the country. The interior is without decoration, and is, in fact, a commonplace structure of two stories, surrounding an oblong courtyard measuring about 45 feet by 30 feet. The verandahs and corridors, surrounding the courtyard, were 6 feet wide, and supported by plain square pillars. The rooms, which opened on to them, are 15 in number on each floor; cell-shaped and without windows. They are, however, large and clean. The courtyard is almost entirely occupied by a rectangular tank, containing the clear limpid water of a spring, around which the building has apparently been erected. This tank was full of the hides of bullocks sacrificed in the adjoining mosque, and there were two or three men employed in cleaning them. On the upper floor there were about 20 women engaged in various occupations, such as scrubbing floors, &c. One only appeared to be a lunatic. She was chained to one of the pillars by a long iron chain attached to a ring round her neck, enabling her to walk up and down the corridor for a few yards on either side of her cell. For the rest there were no signs of dirt, squalor, or lunacy. Indeed, the women confined in the Sidi Firáj are said to be prostitutes, who have failed to pay enough of their earnings into the hands of the Básha of Fez.

The servants of the Institution are hired by the inhabitants to wash the dead and remove them for burial. They perform, in other words, the function of the undertakers. Several broad planks, used as biers, were placed against the sides of the lower verandahs, and, in fact, this undertaking business seems the chief use to which the Sidi Firáj is now put.

Another institution, to which I had been promised but never could obtain admission, is the Z'bálah, or "Dung heap." It is said to be an underground prison where the refractory or too powerful officials and relations of the Sultan are confined. The descriptions given of it are so horrible, that I prefer to think that they may be as exaggerated as those given me of the Sidi Firáj.

The surroundings of Fez have already been more or less described, but one or two places of interest remain to be noted.

On the north the gates, Báb Segma and Báb Mahrog, lead to the Tangier road and to the "Guib Guib" slopes, rising about 500 feet above the level of the plain on the north-west of the city. In the immediate vicinity of these gates the ground is extensively quarried both for the sandstone and for the lime which it contains. Beyond these quarries and to the west the slopes are covered with olive groves as far as the peak, which rises above the camping ground at N'zálah Faráji. The soil of this peak is chalky and, on its northern slope up to the very summit, it is laid out in extensive vineyards.

Just outside the Báb Mahrog there is the slaughter house; a filthy, nauseating, putrifying pool of blood and offal. It is upon this gate that the heads of the sultan's enemies are stuck as a warning to the people and as a celebration of victory. I had an opportunity of seeing this edifying sight, but the ghastly descriptions generally given exaggerate it much. The heads are covered with pitch, and what features might be visible are turned towards the wall.

The only other gate on the north is the Báb Ghissa, near the eastern end of the city. It leads to the cemeteries, where the townspeople love to sit in crowds like white ghosts till the evening *muezzin* summons them within the walls. These cemeteries are on the slope leading to the ravine, beyond which, as already noted, the J'bel Zalágh rises. This mountain is rugged and steep on the face overlooking Fez and the Seboo valley, but its northern slopes are picturesquely wooded and cultivated. Beyond it and to the west there is a vast extent of lower undulating hills and deep ravines, stretching to the valley of the M'kis, and containing in their midst the salt hills and the sulphur spring of Mulai Yacoob.

The inhabitants of Fez and of Morocco generally, I believe, speak of this spring as if it were one of their most sacred spots; and according to current accounts no Christian has ever been allowed to visit it. The Sultan did not absolutely refuse us permission to go there, but as usual the promises of an escort were never fulfilled. There was no harm, however, in riding in the direction of the village where the spring is situated; and, as a matter of fact, we not only entered the village and dismounted at the spring, but experienced no opposition of any kind whatever. The inhabitants, indeed, appeared amicable and gratified. It is true, however, that sometimes large bodies of fanatic pilgrims are camped in the vicinity of Mulai Yacoob, and, on such occasions, the danger to Christians attempting to approach it is very great.

The distance of this village from Fez is about 15 miles. It is reached by a road turning northwards beyond the N'zalah Faráji camping ground, and, skirting the base of the peak till it reaches the hilly district on the northern boundary of the plateau, it penetrates this district and winds along the upper part of cultivated slopes, intersected by deep ravines, until it comes suddenly upon a large village of mud and thatched houses, situated on the side of a steep slope above a deeply cut ravine. At the lower end of the village and just above the ravine a pool is formed by damming with wooden boards a stream, which runs through the village from above. This is the sacred pool of Mulai Yacoob, about which there was so much mystery. In reality its appearance is commonplace and dirty. At the top of the village at a point where the road touches it, there is a bridge across the stream. The water gushes out from a rocky channel under the bridge with a strong sulphurous smell. The channel formed by it is lined with green sulphate of iron, and the temperature of the water is almost unbearably hot, being as much as 120° F. There are no mosques or other religious edifices to show the sacred character of the spot, the only whitewashed house being a small clay and cement building occupied by the *mugaddem* or village overseer.

The following analysis of the water of the Mulai Yacoob sulphur spring was made for me by Mr. Abrines from a sample I secured. It shows the spring to be a hot saline spring, containing an amount of chlorides and total solids higher even than that of sea water.

TABLE of ANALYSIS of Mulai Yacoob water.

Silica, Fe_2, O_3, &c.	2·800	grs. per gallon.
Lime	102·155	„
Magnesia	35·444	„
Alkalies calculated as Na_2O	884·719	„
Chlorine	1232·000	„
Sulphuric anhydride	3·293	„
Sulphur other than SO_3	·548	„
Carbonic acid	23·084	„
Total	2284·043	„
Less O = Cl.	277·633	„
Total mineral constituents	2006·400	„

On the eastern end of Fez there is a gate, the Báb Sidi Bougida, but I did not visit it.

On the southern wall there are three gates, the Báb Fetouh, near the south-eastern end, the Báb Jedid near the centre, and the Báb Hadid at the upper end leading to the Mellah.

The Oujdah road passes out at the Báb Fetouh and leads down the slope, past well-cultivated and irrigated gardens to the Seboo, which it crosses by a seven-arched stone bridge.

The Báb Jedid (new gate) is the most picturesque of the Fez gates. It is placed at the spot where the river bends northwards into the town. The road through it leads directly to the undulating cornfields beyond the city.

The Báb Hadid (or iron gate) gives exit to a road which skirts the northern bank of the ravine and leads to the Mellah, which is entered by a gate called the Báb Banafoo. Near the Mellah, and, indeed, surrounding it and the road leading to it, most of the refuse of the town seems to have accumulated. It forms large embankments, putrifying rapidly under the influence of the heat of the sun and of the moisture supplied by the numerous surface springs and rivulets around. Animals, too, are brought here to die and, as may be imagined, the odours are pestilential.

From the Báb Banafoo a well made road passes down the ravine and crosses the river at its bottom by a bridge. It rises by a steep ascent on the opposite side of the ravine to the undulating hills beyond. This road is known as the Sefroo road, leading to a town of that name about 30 miles distant in the hills of the Bein M'tir range on the south of the Fez plateau. Sefroo is a town of considerable size, 2,200 feet above sea-level, and in hot weather much cooler than Fez. It is abundantly supplied with water from mountain streams and springs and is surrounded by gardens in which fruit trees of every description flourish. Unfortunately for its inhabitants, it is situated in a hollow, which is damp and malarial.

The garden palace, Dár el Biber, belonging to the reigning family, is a very prominent feature in the landscape of the Fez plateau. It is situated on a slightly rising ground about 3 miles south-west of the city, and not far from the Sefroo road, and is surrounded by surface springs and streams, whose waters form into a considerable river, partly flowing to join the Wad el Fas, as already described, and partly conducted by an aqueduct of many arches to the grounds of the Sultan's Palace.

The Mellah or Jews' quarter is by no means devoid of interest. Its inhabitants are much more civilized than their oppressors the Moors, to whom they are servile and cringing. Their houses are built more according to individual taste and are better ventilated. The windows are glazed and open on to the street. There is, moreover, an excellent school, which I inspected at the request of Sir C. Euan-Smith and of the Rabbis. It occupied the upper floor of a large and well-built house, constructed in 1887, and maintained by the "Alliance Israelite Universelle" of Paris and the "Anglo-Jewish Association" of London. The schoolrooms were large and excellently lighted and ventilated. All the subjects of instruction, viz., reading, grammar, arithmetic, geography, writing, history, and recitation are taught in French, and according to modern French systems of education. There were 105 pupils present, divided into four classes of 12, 25, 30 and 38 pupils respectively. Their ages varied from 10 to 12 years in the first or senior class, 8 to 10 years in the second class, and 6 to 8 and 4 to 6 years respectively in the 3rd and 4th classes. The lads were as apt and intelligent as school boys of their age in European schools, and formed a marked and pleasing contrast to their neighbours in the primary schools of the Medina and in that house of knowledge, the Karawin, into which the Moors say a youth enters as ignorant as a clodhopper and comes out one of the pillars of the universe.

As an instance of the better sanitation of the Mellah, I may mention that amongst the pupils, who were examined there was only one case of myopia, one of strabismus, and one of corneal opacity. It is exceedingly doubtful whether 105 boys in a school in the Medina would be found equally free from diseases of the eye.

In the above remarks I have said nothing about the population of Fez. There are absolutely no data upon which to base an opinion. If one were to attempt an estimation at all it might perhaps be reckoned according to the probable density of population per acre of the area enclosed within the walls, but this density of population must vary considerably in different parts of the town. The streets are, it is true, very narrow, but, on the other hand, the houses are not high and do not contain many habitable rooms; so that I should be inclined to believe that 100 persons per acre is an average density of population in an area fully built over by these court-yard houses. There is certainly not more than one square mile so built over, so that the Fez population may roughly be estimated at 64,000. Whenever the Sultan leaves the city to reside elsewhere the population is much less. Indeed, the whole of Fez Jedîd, with the exception of the Mellah, is then practically abandoned.

IV.—REMARKS ON THE POPULATION AND METEOROLOGY OF THE INTERIOR OF NORTHERN MOROCCO AND ON THE DISEASES AND MEDICAL CUSTOMS PREVALENT AMONGST THE INHABITANTS.

There have been few, if any, published investigations on points of such wide medical and scientific interest as the population and meteorology of the interior of Northern Morocco. The coast towns are fairly well known, but, owing to the difficulties put in the way of Christians residing in the interior, it has been almost impossible to record consecutive observations elsewhere than on the coast.

A.—POPULATION.

One of the first things that strikes one on a journey through Northern Morocco is the sparseness of population. With the exception of Fez, Meknes, Wazan, and El Ksâr, there are practically no towns of any importance throughout the whole of this vast area. Villages are few and far between. For example, in an extensive pasture land valley below the camp at Sidi el Yamâni, about 40 miles south of Tangier, I counted, with the aid of field glasses, 15 villages only, the smaller containing six to ten huts each, and the larger 50 to 60. An average sized village appeared to contain only 20 huts. The area of this valley was estimated to be at least 30 square miles, and, allowing 10 individuals to each hut or family, the population of the area would be about 3,000, or, in other words, 100 persons to the square mile. This, I am inclined to believe, is by no means an under-estimate of the density of the rural population in the interior.

One of the most notable features which one observes in the towns is the number of abandoned streets and unfrequented mosques. In 1861 Rohlfs made the same observation and held the opinion that the large towns were formerly more populous than they were then. He attributed this fact to the effects of war and famine, but he refers in another place to the devastating effects of an epidemic of cholera in 1859, which, he states, reduced the population of Fez alone from 100,000 to 75,000. Such observations tend to impress one with the belief that the population of the interior towns is decreasing, and there are several other facts which strengthen this impression.

For example, the number of old men is apparently few. As an instance of this, when I was called upon to select spectacles for several old people connected with the Sultan's court and with the Government, I found that none of them could use a + 4 D presbyopia lens. In fact, none of them had a higher degree of presbyopia than that which could be corrected by a + 2 D lens, a fact which indicates a great scarcity of men of advanced age.

Take, again, the condition of the adult population. Labour cannot be obtained in sufficient quantity to harvest the crops, and extensive fields of wheat and barley are allowed to parch and rot upon the ground. Indeed, the wages of such labourers are comparatively high, and the Sultan's soldiers, who acted as the legation guard at Fez, used frequently to grumble because they could not get away to the harvest fields, where they could earn so much more money.

The absence, too, of good surgeons and physicians is not an unimportant cause of many dying in middle life who might otherwise have lived to old age. Several instances, for example, were brought to my notice of men who had died in the prime of life from rupture of the urethra and other sequelæ of unrelieved stricture; and many such examples of preventible mortality might readily be adduced.

One ought, however, to note that the independent Berber tribes, who inhabit the hilly districts and mountains, are said to be thriving and prosperous, and exceptionally free from the incidence of epidemic diseases. On the other hand, it is considered a disgrace for any male amongst them to "die in his bed."

But the most important evidence of a decreasing population will, I think, be found in the mortality of children. In order to throw some light upon the extent of this mortality, I have endeavoured to collect some statistics of the number of deaths that have occurred in the families of 90 women in Fez in proportion to the number of children born. I am indebted to Miss Copping, one of Miss Herdman's assistants in the North African Mission, for gradually and with great tact obtaining the necessary information for me; and I have tabulated the statements of each woman's account of her children in Appendix III. The women were of all classes, rich and poor, town and country, women from Fez and its immediate vicinity. What tale do they tell? Out of 367 children born to these 90 mothers, 226 had already died, leaving only 141 still alive. That most of these children died in early life can be assumed by an application of the Carlisle Life Table. For, if their ages at death were the same as an equivalent number of children born in England and Wales, one would be driven to the absurd conclusion that every one of the surviving children was 57 years of age at the time the mothers spoke to Miss Copping; that is to say, the proportion of 141 still living out of 367 is equivalent to the number represented in the Carlisle Life Table as the probable number that would be alive at the age of 57 out of every 1,000 children born in England and Wales. But the women themselves spoke of their children having died in early life, one of them even going so far as to say that, although she had young children still alive, they would probably die off like the others, *i.e.*, "they had not yet reached the time of dying," as she expressed it. It may, therefore, be assumed that the mortality amongst children in Fez is greater than amongst children in England and Wales in the proportion of about 680 to 381, or 1⅘ths as high, the figure 680 being the number surviving at the age of five out of every 1,000 children born in England and Wales, and the number 381 the equivalent per 1,000 of the 141 in 367, which are the numbers in the Fez table.

Facts like these are, I think, evidence, though, of course, by no means absolute proof, of a general mortality largely in excess of the birth rate; and as no Christians are allowed to settle anywhere, except in one or two of the coast towns, the decrease in the population is not likely to be made up by immigration. Such a state of affairs must eventually tell on the future of the nation.

B.—METEOROLOGY.

The climate of the sea coast has been thoroughly studied, but there seems to be an entire absence of any published records of temperature, prevailing winds, &c., in the interior. I indulged in a hope that I would find a series of accurate observations in the hands of Dr. Linarès, of the French Military Mission at Fez. I had heard eulogistic accounts of his work in Rabat, and was consequently much disappointed at finding that he had kept no records in Fez.

However, through the kindness of Miss Herdman, of the North African Mission, who permitted me to make use of her private notes. I have compiled an almost consecutive record of the maximum and minimum temperatures at Fez from January, 1891, to April, 1892, and have given these, along with my own records during the period of the Mission, in Appendix IV.

Miss Herdman's temperatures were recorded by a spirit thermometer, placed on the shady side of an open corridor at the top of a house in the centre of the city. The maximum temperatures are, in many of the readings, considerably higher than the actual maximum in the shade, in consequence of the thermometer being exposed to radiated and reflected heat from the walls and floor of the corridor. This is especially the case with the higher temperatures, namely, those above 100° F. For example, on the 1st July, 1892, when my thermometer recorded a maximum of 95° F., Miss Herdman's recorded 106° F. at the same hour; and we frequently noticed that on fiercely hot days, when the sun's rays seemed to bake the houses, her records showed this difference over mine. On the cooler or more cloudy days the difference was not greater than one would expect from the fact that one thermometer was at 300 feet lower elevation than the other.

I mention these facts, because the temperatures recorded by myself were considered by some members of the Mission to be lower than the true maximum, and to tend to minimise the actual heat which they were enduring; more especially as one or two casual observations made by them inside rooms and against walls, which had been exposed to the sun, showed, as they ought to have expected, a temperature much higher than that which is understood as the temperature of the air in the shade.

Instead of a self-registering maximum and minimum thermometer, I took with me a wet and dry bulb thermometer, and recorded, as nearly as possible, the maximum and minimum temperatures by systematic readings at sunrise and in the hotter part of the afternoon.

During the march the thermometer was placed during the night outside the tent, hanging from the tent rope, about three feet from the ground. The maximum was read from the thermometer placed in the same position on the shady side of the tent in the afternoon, or else just inside the tent, with the sides let down from above and the bulbs exposed to as free a circulation of air as possible.

The readings at Fez were recorded from the thermometer placed five feet from the ground against a white-washed pillar in an open verandah, never at any time exposed to the sun, and removed as far as possible from the influence of radiated and reflected heat from surrounding walls.

A glance at the Tables in Appendix IV. will show that Fez is exposed to an extreme annual variation of temperature, from frost and snow in winter to great tropical heat in summer. One should note, however, that the winter of 1890–91, a portion of which is shown in the tables of Miss Herdman's record, was one of exceptional severity all over the south of Europe, and most probably the neighbouring territories of Africa were under the influence of the same cold wave.

December, January, and February are apparently cold months in the interior, as cold as, if not colder than, the winter temperature of many south coast towns in England. The temperatures of July and August, and probably part of June and September, are tropical, and May at times becomes extremely high. I noted, for example, in my diary on June 30th, that the candles had melted and the bindings of books had curled up with the heat, and again, on July 4th, that nearly all the Europeans felt a peculiar stunned sensation at the back of the head. These phenomena were, however, partly due, in all probability, to the high electric tension and the extraordinarily low degree of humidity as much as to the actual temperature of the air.

In the spring and early summer months, and, although I have no personal experience of it, possibly also at the end of autumn, the temperature is subject to great diurnal variation. The exceptional fall after sunset and during the night is very treacherous, especially when one is under canvas, and, unless one is provided with suitable warm clothing and blankets, chill and diarrhœa are almost certain to be induced. As an instance of this, I may quote the case of an officer of the Gibraltar garrison, who joined the mission at Qaa'er R'mil camp without any preparation whatever for the journey. He was so severely affected with chill, contracted during the night, that he was sent back to Tangier, where he remained some days confined to bed with general congestion of the internal organs. I would therefore lay special stress upon the necessity of being prepared for very cold nights even up to the month of June in the interior of Morocco. I myself had been quite unprepared for so much cold, having been misled by a short record of temperature in the itinerary table of Dr. Leared's visit to the Court of Morocco with the Portuguese Mission in 1877. The journey was made at nearly the same time of the year and over much the same route; but the thermometer readings were probably made inside the tent. As Dr. Leared apparently shared the tent with another and kept it closed, the temperature would undoubtedly have got considerably heated above the temperature of the surrounding air by the time the minimum was recorded in the early morning.

One great peculiarity of the meteorology of the interior is the exceptionally low degree of relative humidity, especially during the prevalence of the east wind (*Sharki*) and the south wind (*Tanoobi*). This dryness is also noticeable in the extraordinary clearness of the atmosphere during the heat of summer. Most of us remarked the great distinctness with which the outlines of the surrounding mountains were defined even at noon; and seldom, if ever, did we observe the "heat haze" and "brassy sky," so common in other tropical climates. Terrestrial radiation, therefore, takes place rapidly, and heavy dews almost invariably occur at night, a phenomenon which is well shown in the readings of the wet and dry bulbs at sunrise. It was also noticed, as an instance of low relative humidity that, with an air temperature of 90° F., there was practically no sensible perspiration.

The rainfall seems chiefly to occur during what is known as the rainy season, *i.e.*, October to April, of the southern coast of Spain. In the interior, however, the rainy and dry seasons are not so sharply defined as on the coast. Indeed, during May there are frequently fine drizzling rains, and occasionally heavy showers, and during June and July thunderstorms are not uncommon. We had experience of both these characteristics of the climate during May, June, and July, 1892, and Miss Herdman's record shows them to have been even more marked in the summer of 1891. December, too, instead of being wet, is often very fine and bracing.

These peculiarities of humidity and rainfall depend almost entirely upon the prevailing winds. Referring to the tables of Miss Herdman's record, one finds, for example, that there was rain or thick fog on 80 out of the 153 days in which the wind was noted as blowing from westerly points of the compass, while all the 75 days of easterly or northerly winds were clear and fine. On the remaining 137 days of the year the character of the wind is either not noted or has been recorded as variable, the latter characteristic being, by no means, uncommon in Fez, where the wind often seems to blow from all points of the compass at the same time.

The excessive dryness of the easterly winds is due to the fact that they blow from the Sahara desert, without any intervening expanse of water. That the northerly winds should be equally dry is explained by their moisture being precipitated on the high snowy peaks of the Riff mountains that lie between Fez and the Mediterranean. The west winds, blowing straight from the Atlantic, come loaded with moisture, which falls in rain on the higher plateaux and undulating hills of the interior.

In winter the easterly winds are cold and bracing, in consequence of their dryness; but as surely as they occur in the summer, so surely does the temperature become fiercely hot and oppressive. The dreaded *Sharki* and *Tanoobi* are then like the hot, dry blasts from a furnace.

It may be interesting to note that these desert winds are the same, which are met with in Malta, as the "Sirocco" (apparently a corrupt form of the Arabic word *Sharki*), and in Gibraltar as the Levanter, both meaning the same easterly winds, but differing from the Sharki of Fez in being loaded with moisture taken up in large quantities while sweeping across the Mediterranean.

The westerly winds in the interior are often warm and muggy in winter. In summer they are cool and refreshing, and come as a pleasant relief from the oppressive easterly winds.

C.—DISEASES AND MEDICAL CUSTOMS.

Amongst the Moors there are no physicians or surgeons, properly so-called. As a rule, the part of the former is taken by Providence, the saints and the witches, and of the latter by the barbers. Yet *tabeebs* and *hakims* (doctors and learned men) are occasionally met with, intelligent and willing to learn, but, in the present state of the country, hopelessly ignorant of anything but the action of the simpler drugs. It is said, too, that the Sultan is in the habit of sending some of his subjects to study medicine in foreign Universities, but I neither met with nor heard of any educated physician or surgeon, who was a native of the country. Certain it is, that no physicians or surgeons accompany the army when the Sultan goes on one of his numerous expeditions.

I met, however, in Fez, a Moor of independent character, and far in advance of his countrymen in religious tolerance, who, although he had no special surgical training, possessed a small pocket case containing scissors, lancet, and caustic holder, and was in the habit of performing with its aid minor surgical operations. This Moor had already gathered around him a school of followers, who may in time help to clear away the hopeless ignorance regarding medical and sanitary science, into which the Moorish nation has fallen.

It may not be out of place to indicate here some of the ideas which prevail generally regarding the etiology of diseases.

Epidemics, for example, and most of the exanthemata, are considered as specially sent from God, and the treatment of them would be considered sacrilege in consequence. "They are what God has given," is the inevitable answer of the Moor, when he is asked about the nature of any such illnesses. Most of the other diseases and fevers are supposed to be caused by *jins* or evil spirits, and it is in the treatment of these that witches and other impostors drive a flourishing trade. The treatment, at any rate, of women is almost entirely in the hands of the witches, who pretend to fall into a trance and see the colour of the *jins* that is possessing the body of the patient. It is then considered necessary that the latter should wear henceforth that colour in order to propitiate the former. If she does not get well, the witch goes into another trance and sees a different colour, which, of course, explains the fact that another *jins* must also be propitiated. The most favourite colour supposed to be preventive against disease is a golden yellow, called *Lalla mera.*

Husbands are, as a rule, very much averse to the professional visits of witches, as their wives make them frequently an excuse for getting new and bright-coloured clothing. They look upon witches (*soohar*) as themselves the possessors of many evil spirits. Indeed, the Moorish idea of a woman is that she is born with only one evil spirit, but that every year of her life she acquires one or two more, so that, when she becomes old, she is spoken of as *Moolah el 'Alif,* or "possessor of a thousand." People are very careful, therefore, to appease them as much as possible, generally by the sacrifice of black goats and by presents, in order to avoid being attacked with serious illness.

Saints are also worshipped in connexion with the cure and prevention of disease. A man is supposed to have in him, when he is born, a hundred *shaiyatoon* (devils), and to lose one or more of them every year of his life. Thus, when he becomes old, he is so good and holy that he becomes sanctified and is called "*Sidi.*" Verses of the Koran and the name of Allah, written by one of these saints and placed over the seat of pain, is a constantly employed method of treatment.

Such ideas as these indicate very nearly the general position of the practice of medicine in Morocco. So many diseases are from God, that it is wrong to treat them at all except by verses of the Koran and by invoking the name of Allah or of this or that saint.

Surgical practice, as it is understood in Europe, is unknown. Cupping, firing, and bleeding are, however, extensively employed for the relief of all forms of pain and swellings. Cupping and bleeding generally go together, and the barbers are very expert. They employ for the purpose a sharp razor, with which three linear incisions about one inch long are made, parallel to one another, and a cupping instrument made of tin exactly like a candle extinguisher in shape [and size. A long slender spout is attached near the broad end of the instrument. The mouthpiece of the spout is covered with a piece of camel's skin in such a way that it acts as a valve, and, when the instrument has been placed over the linear incisions, and the air is sucked from the inside, a *vacuum* is caused by the action of this valve.

I saw the process in operation several times and can vouch for its being a most effective method of wet cupping. Moors usually get cupped in this fashion once a year before the commencement of the dog days (ausīla). The spot selected for the operation is the nape of the neck.

Firing is effected by means of the actual cautery and by sulphur balls. The latter are little pellets of sulphur, which are stuck on the skin and then set on fire.

Specimens of the various cicatrices formed by these operations are found on nearly every Moor. The cupping cicatrices are exactly like those formed by the operation of wet cupping as it is performed in England. Cicatrices of the actual cautery are long and broad, and of the sulphur balls small circular, and deep, like large small-pox pits. All these forms of cicatrices will be found together in chronic cases. A good field for studying them is the abdomen of persons suffering from ascites.

It is difficult, if not impossible, to obtain a Moor's consent to any cutting operation, such as the removal of a tumour or a limb. One or two serious cases of wrist joint disease came to me for treatment, but they would not submit to amputation or excision, although cachexia was very great, and I was practically able to promise certain relief. This aversion to amputation operations is not, perhaps, to be wondered at in a country where thieves are punished by having their hands lopped off and the *lex talionis* is in force. Referring to such forms of punishment, I may note that not unfrequently one meets with persons whose hands are shrivelled up like stumps, through the application of a cruel and painful form of treatment. The palms of the hands are incised two or three times with a razor, and the wounds filled with saltpetre and quicklime. The hand is then closed and tied up in a wet piece of camel's skin, which in drying shrinks and contracts upon it. The pain is intense, and after the wound heals the hand is a useless stump.

It must not be supposed that the Moors are apathetic regarding their own and their relatives' sufferings, or that they do not seek the dawning of better times, when they can be subjected to proper medical and surgical treatment. Certainly this is not the case amongst the country people; and there is indeed a great future in Morocco for good medical and surgical work; and I am convinced that the nation which will show the greatest energy in this direction will speedily gain the affection and confidence of the people and probably too of their rulers. The French, Spanish, and Italians push themselves to the front and endeavour to keep themselves *en évidence*, but they do not go below the stratum of officialdom, and their work is more of the character of words than of deeds. That is to say, they praise their own nation for its good surgeons and physicians, and endeavour to induce the Kaids and Bashas to travel abroad and consult one or other of them. The Mahommedan idea of a Christian is that he is a physician (*tabeeb*); and all Europeans, who travel in the interior, are thought to be doctors. Considerable harm may consequently be done by the indiscriminate use of unsuitable drugs by those unacquainted with their effects, and by the raising of hopes, which can never be fulfilled. Country people are very eager to know exactly the truth regarding their sufferings, and nothing can excel the expression of relief and happiness that comes over their faces, when told that a cure can be effected. They are very apt, however, to try one's patience by their importunity and by the exacting manner in which they demand information regarding the minutest details of treatment. They are not satisfied unless they are told definitely whether the medicine is to be taken with or without food, after or before food, with or without water, and so on. Not content with that they will mention a long list of articles of diet, and ask whether each in turn is to be avoided or not, while taking the medicine, and how long the treatment is to be continued. When these and other details are all considered and satisfactory answers given, they will begin the whole series of questions over again to make sure that no point has been missed or omitted. They are, moreover, very critical regarding the action of drugs, and, if the effect is not at once apparent, they come back dissatisfied. On the other hand, their belief in the *Tabeeb* is very great if the treatment is successful. For example, a patient came to me suffering from *ascaris lumbricoides*, and received a dose of santonin, followed by castor oil. It seems he went home and expelled forty round worms, for the next day his wife came for a similar dose for herself, for her father-in-law, and one or two more relatives. She was effusive in her thanks, explaining to all how her husband's soul was dead and his body asleep, and how now the one was awake and the other alive, and space was in his stomach. She went away blessing God and Mulai Hassan for bringing a Báshador and Tabeeb to Fez.

But a fuller idea of the field, which, at present practically untouched, awaits the influence of modern medical and surgical practice, can be gathered from a few notes I collected regarding some of the more prominent diseases and customs. It may not, therefore, be out of place to give these notes in detail.

Abscesses.—Glandular and mammary abscesses are very common. They are frequently treated by passing a red hot skewer through them and working it round and round until a large hole is formed. Mammary abscesses, however, and more solid tumours of the breasts are destroyed by a paste made of dough and sulphate of copper, applied to the part as a poultice. The pain of this treatment is so great that the patient has to have her hands tied behind her back during its application. One girl whom I saw after this treatment had her breast almost entirely removed, leaving an unsightly puckered cicatrix in its place.

Carbuncles (*Shahádah*) are treated somewhat differently, but more disastrously. They are supposed to be caused by little worms, which it is necessary to feed in order to prevent their feeding upon the patient. For this purpose half a pound of lean beef is placed daily over the carbuncle. Very foul sloughs form and leave the patient greatly debilitated. Indeed, they generally die under the treatment.

Boils and Styes (*Dimálah*) are not so commonly observed amongst the natives, but attack European visitors to Fez very frequently. Persons who have never suffered from styes before generally get them in Fez.

Insect Bites are not common. Indeed, the experience of the members of the Mission was that there was a somewhat remarkable absence of the insects one is accustomed to meet with in tropical climates. Probably the houses we occupied were cleaner than usual, for in the older houses scorpions and snakes are said to abound. One patient only came to me with a scorpion sting, but there was nothing very definite about it. He had treated himself before coming to me by making three incisions with a razor above the spot where he had been stung, and his object in applying for treatment was apparently more on account of these incisions than because of the sting.

Centipedes and tarantulas are met with in many of the camping grounds, more especially where the soil is baked and cracked. They were very common at Báb Chooka, for example.

Mosquitoes never troubled us in Fez, but the town, to use the expression of the Moors themselves, is "the cradle of bugs." Indeed, the Arabic word *Bagg*, pronounced in Moorish *Băgg*, is probably the origin of our own name for these pests.

Pediculi and other external parasites are universal amongst the women and children.

Scalds are treated by a red powder, which causes the serum to coagulate into a gelatinous mass, firmly adherent to both cutis and epidermis. It seemed an excellent method of protecting a scalded surface, and probably relieved pain.

Gunshot wounds ought to be very frequently met with in Morocco, as the Moors are constantly shooting one another; but only one case came to me, more with a view to showing the result of his injury than to being treated. He had sustained a wound of the wrist joint six months previously, which had healed perfectly, leaving the joint ankylosed and the tendons of the flexor muscles adherent to the cicatrix.

Most of these wounds are made with old Moorish matchlocks, but recently large numbers of Winchester repeaters, Martini, and Remmington rifles, as well as cheap German muzzle loaders have been introduced into the country.

Epidemics.—Cholera and typhus have frequently decimated the country. An epidemic of the former disease is said by Rohlfs, as already noted, to have reduced the population of Fez by one-fourth in the year 1859. In 1878 and

1879 there was another severe epidemic, which was reported upon by European observers in Mogador and Casablanca on the Atlantic coast, and in Oujdal near the Algerian frontier. It occurred during a year of famine following scanty rainfall, and was succeeded by an epidemic of typhus, which caused considerable mortality amongst the Europeans. As Morocco is in constant communication with the East by pilgrimages both along the Soudan route and by way of the Mediterranean, it is astonishing that epidemics of this nature are not more frequent.

Small-Pox (*Sidri*) is endemic in Morocco, and is one of the most potent causes of the excessive mortality amongst children, and of destructive lesions of the cornea, causing in many cases total blindness. No steps, however, are taken to prevent its spread. On the contrary, it is encouraged. Healthy children are put to bed with those suffering from the disease, and adults may be seen walking about the streets with small-pox scabs still adhering to them. The Moors also inoculate small-pox by making an abrasion on the skin and planting a small-pox scab upon it. A still more objectionable custom in vogue amongst them is to place a small-pox scab inside a plum and give it to the child to swallow. It is said that in both cases a severe type of small-pox follows.

Vaccination is practised in the coast towns, and the Shereefa of Wazan, an English lady, has done much to introduce it into the interior. I found a poor Jew carrying on vaccination in the Mellah at Fez. He learned the practice from a Spaniard, who, I believe, still lives there and practises as a doctor.

Scarlet Fever and Measles are also very common. The Moors do not distinguish between them, both being called *Boo Hammaroon*, or "Father of Redness." Because they and the other exanthemata take a certain number of days to develop and decline, they are regarded as manifestations of the Divine power, and must not be interfered with by any form of medicinal treatment. If one endeavours to argue the point, the Moors only say, *it is their custom*. At the same time soap is banished from the houses where such cases occur, because it is believed that the smell of soap is fatal.

Fevers.—The Moors distinguish between intermittent, remittent, and typhoid fevers. The quotidian, tertian, and quartan types of ague are well recognised, and have their special names (as, for example, *Thletsa* or *Seltsa*, from *Thlâtah* = Three, for tertian ague; *Berd sakhânah* = cold and hot, being the general expression for an attack of ague).

Remittent and typhoid fevers are called *Selma*, *i.e.*, fevers that are abandoned or given up; fatal fevers, in other words. The typhoid type is *Selma ma kirsh*, or the "bowel" type of these fevers. The treatment of such fevers is hopeless, owing to the superstition of the natives, who, as a rule, refuse to allow the patients to take food. A quarter of a pound of honey mixed with some quantity of vinegar is given at the commencement of the illness, and acts as an emetic; but if a patient is thought to be dying, no treatment of any kind is permitted.

All these types of fever are very common in Fez. A morning salutation frequently heard there is *Ash hál ek f' es-sakhánah* ("How are you in the fever"?), such salutations being customary at a time, when any special morbid or meteorological conditions are prevalent. For instance, during the residence of the British Mission in Fez this salutation indicated a widespread epidemic of influenza or dengue.

The intermittent fevers met with in Fez come from neighbouring villages, especially those situated on the swampy ground near the Rás el Ma. I saw several examples of enlarged spleen from these districts.

Diseases of the throat are very rare in Fez, and those that do occur are of the nature of quinsy. Diphtheritic and follicular tonsillitis is practically unknown. For example, Miss Copping, of the North African Mission, took with her, when she first went to Fez, a special mixture for use in such affections, but has never yet had occasion to use it, although during two years she has seen, on an average, about 400 patients monthly. I took with me a considerable quantity of salicylate of soda for the same purpose, but there was only one case of follicular tonsillitis amongst members of the Mission, and that did not occur in Fez, but during the march.

Phthisis and Lung affections generally are also said to be rare. It is not improbable that, owing to a decreasing population, overcrowding is unknown, and that this important factor in the production of phthisis is consequently absent. On the other hand, it should be noted that abscesses of the cervical glands, apparently tubercular in character, are exceedingly common.

Diseases of the Circulatory System are not often met with. *Anæmia* is, however, common, and is treated by the administration of water, in which rusty nails have been kept.

Diseases of the Eye are very common throughout the country, but they do not appear to be so common in Fez as in El Ksár (*see* Itinerary Notes). On the 7th July I examined 118 of the poor of Fez, and on the following day 209, who came to the British Legation for alms, promised them out of the money received by Sir C. Euan-Smith as compensation for the part taken by the Basha of Fez in rousing popular excitement against the Mission on the first day of the Eed el K'bîr. Among the first lot there were 29 suffering from ophthalmia, with either complete or partial opacity of the cornea, 25 had their eyes gouged out or completely destroyed by inflammatory diseases, while only three had cataract. Amongst those who came the second day, nine only were blind in consequence of ophthalmia causing corneal opacity, while 13 had their eyes destroyed by inflammation or by being gouged out. Small-pox and severe conjunctivitis followed by trachoma and corneal ulceration are the commonest causes of most of these cases.

A few cases of glaucoma were also seen in an advanced and hopeless stage, with the episcleral veins tortuous and varicose, and the globe of stony hardness.

Natives apparently do not attempt to treat eye diseases, but an absurd form of quackery is practised in the case of corneal opacity. An egg, on which verses of the Koran are written is passed round and round the circumference of the orbit, and then placed for a short time with its end against the corneal opacity. It is next broken, and the white speck is shown to the patient inside the yolk. One woman solemnly declared to me that she had been cured in this manner.

Disease of the Digestive System.—Gastric catarrh and dyspepsia are simply universal amongst Moors. If, according to Moslem law, they may not touch strong drink, they certainly manage to cause themselves as much gastric disturbance by intemperance in eating, as the most confirmed drunkard does by drink. Surfeit is the fashionable complaint, and one seldom meets a native of Morocco who does not ask for a *Suhlah,* or purgative to cure, as he terms it, *Jofri,* or stomach sickness. Almost any kind of flesh is eaten, horses, mules, donkeys, and pigs excepted. Cats, wild and tame, hedge-hogs, jackals, foxes, and, above all, camels are considered delicacies. A camel, for example, dying of festering galls will be killed by its owner for sale as food; and the people compete keenly for portions of the flesh. Locusts are also a favourite food. They are sold in the bazar by the pound weight.

Intestinal parasites, especially the Ascaris lumbricoides, simply infest the Moors of Fez. The ova are probably found in the river water, and amongst the vegetables, which are extensively cultivated in irrigated fields and gardens around Fez. Cysticerci, too, are exceedingly common in the internal organs, especially the liver and lungs of the Barbary cattle. The symptoms of the disease are well recognised. A native will tell you that he is suffering from worms (*en noosha*), when he has a slimy taste in the mouth, or sees slime (*slook*) on his pillow in the morning, and feels an uncomfortable sensation in the abdomen, with occasional attacks of dimness of vision. Pitch is drunk for the purpose of expelling the worms, but just as often the disease is treated by tying over the abdomen a piece of paper, on which some shereef has written the name of Allah.

Dysentery and Diarrhœa have to be carefully guarded against by Europeans visiting Fez. The former disease had been the scourge of previous missions. One of the severest cases of dysentery I have ever seen occurred in the case of a European, who accompanied us from Tangier, but occupied a house in Fez, where unboiled water was being used. The natives treat dysentery by swallowing the powdered rind or root of the pomegranate (*Kashorah* or *Shdooa* *de Román*). The taste is exceedingly disagreeable and nauseating, but the remedy seems very efficacious in chronic cases.

Diseases of the Skin.—Eczema (*sifra*) is treated by surrounding the body with a cloak and burning underneath it the leaves of the rhododendron (*diflah*), placed on some live charcoal. This form of treatment is also said to be applied to all forms of inflammatory skin diseases.

Ringworm (*ezze*) and epizootic diseases generally are almost universal. There is scarcely a boy in the streets who has not circular patches of baldness, or the crusts of favus and pityriasis upon his head. These crusts are commonly termed *Goob* or *Gooba* (vulgar for Qobba = a tent), on account of their raised shape. The crusts of Rupia have also this name. A common method of treating these diseases is the application of red lead or an ink made out of nut galls (*afsás*).

Obstetric practice is carried on by widows, and their principle is to do nothing. Labour is allowed to be prolonged indefinitely, and, as a consequence, rupture of the perinæum, prolapse of the uterus and vesico-vaginal fistula are very common. The last-named distressing condition frequently leads to husbands getting rid of their wives by divorce or by poisoning.

Ecbolics (*Dua bash fazákat* = medicine for forcing) are employed for procuring abortion, but not for aiding parturition. A drug, *el farbigoon*, obtained in the Atlas, is much used for this purpose. Ergot of rye is also common in the country, but I am not aware that it is used medicinally.

Another medicine, which is constantly demanded from Europeans, is the *Dua besh walad*, or medicine that will cure sterility.

Poisoning is universally practised in Fez, and indeed throughout Morocco. Women are, as a rule, the culprits, and their husbands the victims. Thus, when a wife has discovered the place where her husband's wealth is stored, she does not scruple to poison him and take possession. Patients frequently apply for treatment, saying that they have been "fed" as they term poisoning. One patient, whom I treated, came afterwards to inform me that he had divorced his wife, and that he was therefore no longer in need of further treatment.

The poisons used are arsenic (*Saliman*) and corrosive sublimate (*Dráj*). The former is usually given in sweets, and the latter in tea and coffee.

Another form of poisoning is practised by putting pieces of the flesh of donkeys and camels that have died into the dishes of meat. Severe and often fatal attacks of vomiting and purging result.

Intoxicants are indulged in in the form of Kief smoking; the *kief* being the dried leaves of the *Cannabis Sativa* (Indian hemp). Its evil effects are well recognized, and as the Moorish proverb has it, "The friends of drink inherit forgetfulness and die young." The Jews and some of the natives make brandy clandestinely out of figs and other fruits, and get intoxicated in a more heterodox or Christian fashion. Opium eating, too, is not uncommon.

Venereal Diseases.—I have left to the last the subject of syphilis and venereal diseases. They are so universal and they are met with in so many different forms that they have quite a terminology of their own. The general term for syphilis is *Mard el K'bir* (= the great sickness) or *Mard en Nassawin* (or *Mard en N'sa*) signifying the "women's sickness." Primary syphilis is called *Noohar* or "the flowers," secondary syphilis *taihar*, and hereditary syphilis *Wáris* ("inherited"). This last form is supposed to originate in a basket of maggots (*dood*) inside the heart, and the natives say that if these are left alone they will work their way to the skin. Consequently a child showing the characteristic eruption is considered very lucky. Treatment is most carefully avoided in such cases, as it is imagined that any medicines clearing the skin can only do so by driving the maggots back to the heart. They may, however, be removed by strong purgatives before they reach the skin.

The treatment of the primary and secondary varieties is carried out according to a strict *régimé*, which gives rise to many prejudices in the matter of food and drink, such, for example, as the necessity of abstinence from goat's flesh and sour liquids. The treatment consists in giving sarsaparilla (*Sarsa* or *Ishbah*) for 45 days. During that time the patient must be kept on low diet and everything with an acid taste avoided, not only during the treatment but for long afterwards, as acids are supposed to drive the sarsaparilla, which holds the disease in check, out of the system. Persons who have undergone this prescribed *régimé* are *doos* or *mafscotah*, and, before one prescribes acid medicines, it is necessary to ask a patient, whether he has gone through this treatment. The expression "*ishibsti*" (= have you been treated with sarsa?), for example, is one of the words found in the special terminology of syphilis. This form of treatment cannot, it may be remarked, be very efficacious judging from the numberless specimens of syphilitic eruptions, which are seen in Fez. Gummata and Rupia are perhaps the commonest of all, but syphilitic disease of the nose is also constantly observed in the streets.

Gonorrhœa (*Berd* or *Pasfiya*) and its complications are common in Fez, where prostitution is extensively practised. Stricture is apparently never treated, and, as already stated, often leads to death in the prime of life.

Many of these notes and remarks may seem absurd, but they are taken from the mouths of the people themselves; and, as there are no doctors or others whose interest it is to enlighten the nation upon matters connected with health and disease, they represent fairly the state of knowledge on such subjects existing generally amongst the inhabitants of the most learned town in Morocco.

I cannot close without mentioning the work carried on in Fez by Miss Herdman and Miss Copping of the North African Mission under conditions of the utmost obstruction and isolation; work which could only be carried out by unsurpassed courage and devotion. They are now joined by one of the medical missionaries from Tangier and other members of their mission; but for the past three years they have been the pioneers of civilization in the interior of Morocco, where they have settled themselves in the very centre of the fanatic Fez population, whose confidence they have so far gained that between May 1891 and April 1892 there were no fewer than 7,679 attendances at the *Dár at tabeeba*, as their home in Fez is called. It is to the unrivalled opportunity afforded me there of seeing every variety of disease, incident upon the people and to the information these ladies were able to give me, after an exceptional experience in treating them, that I owe these notes on the diseases and medical customs prevalent amongst the Moors.

APPENDIX I.

MEDICAL REPORT ON THE BRITISH MISSION TO FEZ, 1892.

DETAILS OF PERSONNEL AND TRANSPORT.

A. *Personnel.*

	Description.	Number.
Europeans.	British envoy and Foreign Office officials	6
	Ladies	4
	Military officers (British Army)	5
	„ (Sultan's Army)	1
	Private gentlemen	3
	Maids	2
	Soldier servants	3
	Legation servants	8
	Private servants	5
Moors.	Legation scribe (F'keh)	1
	Cavalry escort (Makhasni)	50
	Legation soldiers (Makhasni)	4
	Conservancy men (from Swáni village)	11
	Grooms	50
	Camel drivers	14
	Muleteers	50
	Tent pitchers (Fereghi)	25
	Camp followers of Kaid	17
	Private servants	24
Natives of British India.	Legation servants	5
	Total	288

B. *Transport.*

Description.	Number.
Camels	56
Riding horses	110
Riding and pack mules	180
Total	346

APPENDIX II.

SANITARY REGULATIONS recommended during Residence of British Mission in Fez.

1. No water is to be used for drinking or cooking except what is specially brought in for the purpose. The water in the fountains, &c. is on no account to be used except for scrubbing and general cleaning.

2. Water bottles, decanters, milk jugs, and all vessels used for keeping articles of drink are to be cleansed with the water used for drinking, and not with the water in the fountains.

3. Bottles will be filled and labelled "Boiled water," and such water only must be used for drinking.

4. No animals are to be killed and cleaned in the garden.

5. No refuse heaps are to be formed in the gardens. Refuse of every description is to be burned at once, or placed in baskets and buckets supplied for the purpose and removed daily outside.

6. Latrine arrangements will be adhered to as labelled,—No. I. For servants and for emptying slops, &c. No. II. For officers of the Mission. No. III. For female servants. No. IV. For Moorish servants living in gardens.

7. The trenches in latrines II., III., IV. will be filled up every third day, and the necessary tents pitched in a different portion of the garden. Quicklime will be used in the trenches.

8. Irrigation water, passing into the portions of the garden where tents are pitched, must be shut off at once.

9. Rank grasses and weeds are to be cut down and removed or burnt. The trees and bushes in the gardens are to be pruned, so as to permit of a free circulation of air.

10. Rooms should be kept open, as much as possible, day and night.

11. The narrow, close streets of the town should be frequented as little as possible. Everyone should endeavour to get out into the open country and hills as often as possible.

12. European servants and others are warned against (*a.*) going about without sufficient protection against the sun; (*b.*) not wearing sufficient protection against chill in the shape of a flannel belt round the waist; (*c.*) concealing any illness, even of a trivial character; (*d.*) eating too much, especially rich meats, in hot weather and with little exercise.

APPENDIX III.

STATISTICS of the NUMBER of CHILDREN who have died out of the total born to 90 Moorish Women in Fez. (Collected in June and July 1892.)

Index Number of Woman.	Number of Children born.	Number of Children dead.	Remarks.
1	1	—	
2	5	5	
3	7	6	
4	1	1	
5	11	10	
6	3	3	
7	7	6	Died of small-pox.
8	2	1	
9	4	3	
10	1	1	
11	5	3	
12	2	2	
13	1	—	
14	1	—	
15	1	1	
16	1	—	
17	3	3	
18	10	6	Died of small-pox.
19	9	5	„
20	3	1	„
21	6	5	„
22	1	1	
23	2	—	
24	2	—	
25	8	3	Survivors still young children.
26	6	3	
27	4	2	
28	7	7	
29	1	1	
30	2	—	
31	4	3	
32	2	2	
33	7	6	
34	11	11	Well-to-do family.
35	3	—	Children have been vaccinated.
36	10	4	
37	2	1	
38	2	2	
39	9	4	
40	8	7	
41	3	2	
42	2	2	
43	5	—	
44	5	2	
45	2	2	
46	1	—	
47	2	—	
48	6	6	
49	7	4	
50	1	—	
51	2	1	
52	14	14	
53	3	2	
54	8	8	
55	2	—	
56	1	1	
57	2	2	
58	2	2	
59	7	6	
60	2	—	
61	3	—	
62	3	3	
63	2	2	
64	4	—	
65	1	—	
66	2	—	
67	5	3	
68	2	—	
69	10	10	Married four times. Children died in infancy.
70	1	1	
71	5	2	
72	3	—	
73	2	—	
74	5	5	Died of small-pox.
75	3	3	Two died of small-pox.
76	2	—	
77	3	—	
78	4	—	Twins once.
79	4	2	
80	7	6	Syphilitic woman. Twice married.
81	3	3	
82	3	—	
83	5	—	
84	7	1	
85	3	3	
86	4	2	Twins once.
87	7	3	
88	5	1	
89	3	2	
90	4	1	
Total -	367	226	141 surviving.

APPENDIX IV.

METEOROLOGICAL TABLES.

TABLE A.

Itinerary Observations. Tangier to Fez.

Date.	Minimum Temperature recorded (in the Shade).						Maximum Temperature recorded (in the Shade). * Those marked with an asterisk were recorded inside a Field Officer's Tent.						Remarks.
	Dry Bulb, F.	Wet Bulb, F.	Relative Humidity.	Time of Record.	Place of Record.	Height above Sea-level.	Dry Bulb, F.	Wet Bulb, F.	Relative Humidity.	Time of Record.	Place of Record.	Height above Sea-level.	
1892. April 27	—	—	—	—	——	Feet. —	*68	—	—	p.m. 4.30	Qaa er R'mil	Feet. 30	
„ 28	56	56	Dew point.	5.30 a.m.	Qaa er R'mil	30	—	—	—	—	——	—	
„ 29	52	52	„	Sunrise	„ „	„	*70	*64	69	4.30	Sok el Gharbiya	250	
„ 30	48	48	„	„	Sok el Gharbiya	250	*80	*74	71	2.30	Sid el Yamani	730	
May 1	53	50	80	„	Sid el Yamani	730	*73	*64	58	4.30	Thláta Raba' Raisána.	500	Wind, E. to N.E. Cloudy.
„ 2	57	54	81	„	Thláta Raba' Raisána.	500	68	59	56	2.0	El Ksár el K'bir	150	Wind, a.m. S.E., p.m. W. and cool.
„ 3	54	53	93	„	El K'sár el K'bir	150	65	59	68	4.30	Karia er Ramoos	300	Wind, W. to S.W. a.m., very cool W. p.m.
„ 4	57	56	93	„	Karia er Ramoos	300	*73	*65	62	2.30	Seboo ferry	30	Wind, S.W. a.m., raining p.m.
„ 5	56	56	Dew point.	„	Seboo ferry	30	*73	*63	54	2.30	Sok el Juma	30	Cool W. wind p.m.
„ 6	43	42	92	„	Sok el Juma	30	72	58	42	2.30	Sidi Gueddár	50	Very cold morning, icy water.
„ 7	43	42	92	„	Sidi Gueddár	50	76	64	49	4.30	Bab Chooka	250	
„ 8	48	47	93	„	Bab Chooka	250	75	65	55	3.0	„ „	„	Cool and cloudy, W. breeze.
„ 9	50	50	Dew point.	„	„ „	„	68	62	68	2.30	Segota	1,300	Cool N.W. wind p.m.
„ 10	54	53	93	„	Segota	1,300	69	59	53	3.30	M'kis	600	
„ 11	57	54	81	„	M'kis	600	—	—	—	—	——	—	
„ 12	52	48	74	„	N'zalah Faráji	1,200	67	64	33	3.0	Fez	1,100	

Table A.—*continued.*

Itinerary Observations. Fez to Salee (Rabat).

Date.	Minimum Temperature recorded (in the Shade).						Maximum Temperature recorded (in the Shade).						Remarks.
	Dry Bulb, F.	Wet Bulb, F.	Relative Humidity.	Time of Record.	Place of Record.	Height above Sea-level.	Dry Blub, F.	Wet Bulb, F.	Relative Humidity.	Time of Record.	Place of Record.	Height above Sea-level.	
1892. July 13	54	51	80	Sunrise	Rás el Ma . .	feet. 1,200	87	70	39	p.m. 2.30	Rás el Ma . .	feet. 1,200	Clear blue sky, cool N. wind.
„ 14	47	45	86	„	„ . .	„	95	74	33	„	„ . .	1,200	„ „
„ 15	51	50	93	„	„ . .	„	95	72	30	„	M'kis . . .	600	Wind S.W.
„ 16	57	53	87	„	M'kis . . .	600	89	69	33 (?)	„	Segota . . .	1,300	Strong N.W. wind.
„ 17	55	55	Dew point.	„	Segota . . .	1,300	88	60	27 (?)	„	„ . . .	1,300	
„ 18	60	60	„	„	. . .	„	93	70	29	„	Bin el F'keh .	200	
„ 19	62	62	„	„	Bin el F'keh .	200	87	71	41	„	Meshra er Rimla .	50	Cool pleasant breeze W.
„ 20	55	54	93	„	Meshra er Rimla .	50	86	70	40	„	Bir Rammee .	?	Cool sea breeze N.W.
„ 21	62	62	Dew point.	„	Bir Rammee .	?	—	—	—	„	Salee . . .	Sea-level	„ „

TABLE B.

METEOROLOGICAL TABLES.

Records of Temperature, &c., during stay of British Legation at Fez.

Date.	Temperature at 5.30 a.m. (Fahrenheit).			Temperature at 2.30 p.m. (Fahrenheit).			Remarks.
	Dry Bulb.	Wet Bulb.	Relative Humidity.	Dry Bulb.	Wet Bulb.	Relative Humidity.	
1892. May 13	56	52	75	69	58	50	Rain clouds. Cool.
„ 14	49	47	86	74	60	43	
„ 15	52	48	74	73	60	45	
„ 16	63	56	63	82	66	40	
„ 17	61	54	62	76	62	43	Sky overcast. Close weather.
„ 18	63	56	63	78	63	41	Oppressive weather. Thunder.
„ 19	62	60	88	85	68	38	Thunder clouds. Hot. Oppressive.
„ 20	64	59	72	87	65	29	
„ 21	63	61	88	84	75	60	Hot. Thunder, lightning, rain. Wind, W.
„ 22	63	61	88	74	68	70	Cool, cloudy. Wind, W.
„ 23	58	56	87	73	66	66	
„ 24	60	59	94	82	76	72	Cloudy. Wind variable.
„ 25	63	62	94	80	69	53	Cloudy. Westerly winds cool.
„ 26	63	62	94	64	59	72	Cold day. Drizzling rain. Wind, W.
„ 27	59	55	76	65	57	59	Continuous rain during night. Wind, W.
„ 28	55	52	81	73	66	66	Rain towards sunset. Strong wind; cold and westerly.
„ 29	55	53	87	79	66	47	
„ 30	62	59	82	78	63	41	Cloudy. Cool westerly breezes.
„ 31	60	58	88	75	66	58	
June 1	57	55	87	78	68	56	
„ 2	61	59	88	86	73	49	Very hot and oppressive.
„ 3	62	58	77	80	70	56	
„ 4	60	57	82	84	74	57	Oppressive weather. Thunder clouds.
„ 5	72	63	57	90	79	56	Hot winds from S.E. ("Sharki").
„ 6	71	64	65	92	76	43	„ „ „
„ 7	67	63	78	83	72	54	Rain during night. Cool winds from N.W.
„ 8	62	61	94	82	68	45	Westerly winds. Cool. Mist on hills.
„ 9	62	60	88	81	70	53	Westerly winds. Cool and pleasant.
„ 10	65	63	88	90	72	38	Slight rain. Cloudy. Westerly wind.
„ 11	63	61	88	89	71	37	Cool northerly breezes.
„ 12	63	60	82	67	65	88	Cool and cloudy.

Table B.—*continued.*

Date.	Temperature at 5.30 a.m. (Fahrenheit).			Temperature at 2.30 p.m. (Fahrenheit).			Remarks.
	Dry Bulb.	Wet Bulb.	Relative Humidity.	Dry Bulb.	Wet Bulb.	Relative Humidity.	
1892. June 13 -	60	60	Dew point.	73	67	70	Rain forenoon and early morning. Weather exceptionally cool.
" 14 -	62	61	94	76	65	52	Fleecy clouds. Very cool. Wind W.
" 15 -	65	61	78	77	67	56	Wind W. Cool.
" 16 -	64	61	82	79	68	53	
" 17 -	57	56	93	81	71	56	Cool. Pleasant weather. Wind W.
" 18 -	62	61	94	79	76	85	" " "
" 19 -	56	55	93	78	66	50	Nights getting hotter. Up to date, blankets have been required at night.
" 20 -	59	56	82	80	70	56	
" 21 -	61	60	94	84	74	57	
" 22 -	59	57	88	88	74	46	Hot and stuffy. Evening cool. Wind N.W.
" 23 -	60	60	Dew point.	82	72	57	Wind changing to E. by N.
" 24 -	60	59	94	84	77	68	Hot easterly winds (Sharki), causing vary oppressive weather.
" 25 -	61	60	94	93	83	60	" " "
" 26 -	73	62	51	96	73	30	" " "
" 27 -	73	62	51	98	76	32	" " "
" 28 -	74	64	55	97	74	30	" " "
" 29 -	74	64	55	100	71	23 (?)	" " "
" 30 -	74	64	55	101	74	25 (?)	" " "
July 1 -	77	62	41	95	73	31 (?)	Thunderstorm in afternoon with strong southerly gusts of wind, tearing up trees in garden. Temperature in centre of town 106°.
" 2 -	74	64	55	98	74	29 (?)	
" 3 -	73	61	48	96	75	33	
" 4 -	71	63	61	91	73	38	Curious ball-like clouds, with violet-coloured sky.
" 5 -	70	61	57	95	75	35	Atmosphere exceptionally clear during day. Cloudy towards evening. Breezes cool westerly.
" 6 -	70	61	57	96	74	31	" " "
" 7 -	72	65	65	88	76	52	" " "
" 8 -	72	65	65	98	78	36	" " "
" 9 -	76	69	67	99	9	36	" " "
" 10 -	74	67	66	100	74	27 (?)	" " "
" 11 -	71	62	57	95	74	33	Cool, and pleasant westerly breezes.
" 12 -	65	62	83	85	72	49	Very cold. North wind. Blankets again required at night.

TABLE C.

METEOROLOGICAL TABLES.

TEMPERATURES, &c., recorded at Fez by Miss Herdman of the North African Mission. The readings are from a minimum spirit thermometer. The minimum is, accordingly, a true minimum. The maximum is the highest reading noted during several observations made in the afternoon. The thermometer was placed in the shade against the northern wall of a house situated about 800 feet above sea-level, in the most crowded part of the city.

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. January 1	44	50	W.	Rain.
" 2	45	52	W.	36 hours' rain.
" 3	47	52	N.W.	Showery.
" 4	45	53	W.	Fine.
" 5	41	52	N.W.	"
" 6	40	55	N.W.	Heavy rain. Stormy.
" 7	40	45	W.	" "
" 8	37	47	W. to S.E.	Fine and cold.
" 9	34	43	S.E. to W.	Very cold.
" 10	41	44	W.	in evening Heavy rain in morning.
" 11	30	41	S.W.	Ice and snowing hard.
" 12	26	40	Calm	Ice. Fine.
" 13	28	39	Calm	" "
" 14	29	45	W.	" "
" 15	30	46	N.W.	" "
" 16	33	48	N.E. to N.W.	Thaw.
" 17	36	48	W.	Showery.
" 18	41	45	W.	"
" 19	30	42	W.	Hard frost. Fine.
" 20	28	45	Calm	" "
" 21	26	45	Calm	" "
" 22	36	51	W.	Thaw. Fine.
" 23	42	56	E. to W.	Fine. Mild.
" 24	37	55	N.E.	" "
" 25	36	62	S.E.	" "
" 26	36	61	S.E. to W.	" "
" 27	36	60	E.	" "
" 28	37	61	E.	" "
" 29	37	61	N.	" "
" 30	37	61	W.	" "
" 31	37	61	E.	"

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. February 1	37	64	E.	Fine.
„ 2	36	63	W.	„
„ 3	40	60	N.E.	„
„ 4	40	56	N.E.	„
„ 5	35	57	N.E.	„
„ 6	37	59	N.E.	„
„ 7	39	60	N.E.	„
„ 8	—	—	S.W.	Rain in evening.
„ 9	43	54	S.W.	Rain.
„ 10	40	59	N.W.	Fine.
„ 11	40	60	E. to N.W.	„
„ 12	44	60	S.E.	Cloudy.
„ 13	42	64	S.E.	Fine.
„ 14	39	62	S.E.	„
„ 15	42	60	N.E.	Fine. Wind cold.
„ 16	40	64	E.	Fine.
17	39	67	E.	„
18	39	66	E.	„
„ 19	40	66	E.	„
„ 20	44	63	E.	„
„ 21	44	70	E.	„
„ 22	41	68	E.	„
„ 23	45	72	N.E.	„
„ 24	48	69	Variable	Cloudy.
„ 25	48	73	E.	Fine.
„ 26	48	63	S.W.	Rain.
„ 27	43	65	Variable	Fine.
„ 28	45	68	N.	„
March 1	45	70	N.E.	„
„ 2	48	73	N.E.	„
„ 3	50	72	N.E.	„
„ 4	49	69	N.E.	„
„ 5	47	64	E.	„
„ 6	45	68	E.	„
„ 7	45	72	E.	„
„ 8	49	72	W.	Cloudy.
„ 9	49	76	W.	Fine.
„ 10	48	74	Variable	Stormy.
„ 11	51	61	W.	Heavy rain.
„ 12	45	60	W.	Cloudy. Stormy

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891.				
March 13	45	55	W.	Rain.
„ 14	45	51	W.	„
„ 15	44	57	W.	Showery.
„ 16	39	60	W.	Fine.
„ 17	46	64	W.	Slight rain.
„ 18	55	64	W.	Very heavy rain.
„ 19	52	62	W.	Rain.
„ 20	50	58	W.	„
„ 21	50	56	W.	Very heavy rain.
„ 22	49	55	W.	Heavy rain.
„ 23	46	55	W.	„ „
„ 24	47	56	N.W.	„ „
„ 25	46	64	Variable	Fine.
„ 26	47	66	W.	„
„ 27	45	70	E.	„
„ 28	48	70	W.	„
„ 29	47	72	N.W.	Slight rain.
„ 30	52	65	N.W.	Rain. Stormy.
„ 31	50	59	W.	Rain.
April 1	49	64	W.	„
„ 2	49	61	N.W.	„
„ 3	51	68	N.	Fine.
„ 4	47	74	N.	„
„ 5	49	76	N.	„
„ 6	55	87	W.	Hot.
„ 7	57	88	Variable	„
„ 8	55	73	„	Slight rain.
„ 9	47	64	N.W.	Fine.
„ 10	45	65	N.W.	„
„ 11	45	63	N.W.	„
„ 12	45	63	N.W.	Slight rain.
„ 13	43	72	N.E.	Fine.
„ 14	50	72	N.E.	„
„ 15	52	82	Variable	Fine and warm.
„ 16	50	85	„	„ „
„ 17	52	84	„	Fine. Locusts appeared.
„ 18	55	80	W.	„ „ „
„ 19	55	75	W.	„ „ „
„ 20	53	75	W.	Fine. Many locusts.
„ 21	55	74	W.	Fine. Locusts fewer.

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891.				
April 22	53	73	N.W.	Fine. Locusts fewer.
„ 23	56	72	N.W.	„ „ „
„ 24	49	72	N.W.	„ „ „
„ 25	50	74	N.W.	Fine. Locusts gone.
„ 26	49	64	S.W.	Slight rain.
„ 27	54	60	W.	Rain.
„ 28	49	59	W.	Heavy rain.
„ 29	50	70	W.	Fine.
„ 30	55	75	S.W.	„
May 1	56	85	E. to S.	„
„ 2	60	83	Variable.	„
„ 3	58	70	W.	Slight rain.
„ 4	47	72	W.	Fine.
„ 5	49	75	W.	Fog.
„ 6	54	76	N.W.	Fine.
„ 7	54	76	N.W.	„
„ 8	53	72	N.W.	Slight rain.
„ 9	52	75	W.	Fine.
„ 10	51	78	W.	Slight rain.
„ 11	47	75	W.	Fine.
„ 12	55	76	N.W.	„
„ 13	55	85	N.W.	Heavy showers.
„ 14	59	84	W.	Showery.
„ 15	55	76	W.	Fine.
„ 16	62	74	W.	„
„ 17	59	77	W.	„
„ 18	57	78	W.	„
„ 19	57	83	W.	„
„ 20	59	84	W.	„
„ 21	57	75	W.	Rain.
„ 22	54	73	W.	„
„ 23	55	67	W.	Slight rain.
„ 24	53	70	W.	Cool.
„ 25	53	72	W.	„
„ 26	57	69	W.	„
„ 27	54	71	W.	Fine.
„ 28	49	73	W.	„
„ 29	54	75	W.	„
„ 30	60	80	W.	„
„ 31	61	83	S.W.	„

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. June 1	60	74	N.W.	Fine.
„ 2	60	77	W.	„
„ 3	60	82	W.	„
„ 4	61	80	N.W.	„
„ 5	55	77	N.W.	Cloudy.
„ 6	61	78	N.W.	Breezy.
„ 7	60	70	N.W.	Rain.
„ 8	63	73	N.W.	Fine.
„ 9	63	80	N.	„
„ 10	61	80	N.	„
„ 11	61	84	N.	„
„ 12	64	92	N.W.	„
„ 13	67	89	N.W.	„
„ 14	65	92	—	„
„ 15	68	93	—	„
„ 16	70	94	—	Thunder. Rain.
„ 17	70	93	S.W.	„ „
„ 18	70	91	S.W.	„ „
„ 19	70	92	S.W.	Thunderstorm in mountains.
„ 20	68	95	S.	„
„ 21	69	92	—	„
„ 22	67	93	N. to S.	„
„ 23	66	76	—	Heavy rain. Thunderstorm.
„ 24	63	79	—	
„ 25	63	83	W.	Fine.
„ 26	65	89	W.	„
„ 27	67	94	N.	„
„ 28	70	100	—	
„ 29	75	96	—	
„ 30	74	101	—	
July 1	—	96	—	
„ 2	—	94	—	
„ 3	—	92	—	
„ 4	—	96	—	
„ 5	—	104	—	
„ 6	—	108	—	
„ 7	—	106	—	
„ 8	—	96	—	
„ 9	—	92	—	
„ 10	—	90	—	

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. July 11	—	89	—	
„ 12	—	94	—	
„ 13	—	92	—	
„ 14	—	90	—	
„ 15	—	92	—	
„ 16	—	91	—	
„ 17	—	94	—	
„ 18	—	93	—	
„ 19	—	95	—	
„ 20	—	108	—	
„ 21	—	112	—	
„ 22	—	111	—	
„ 23	—	110	—	
„ 24	—	100	—	
„ 25	—	102	—	
„ 26	—	102	—	
„ 27	—	102	—	
„ 28	—	101	—	
„ 29	—	95	—	
„ 30	—	91	—	
„ 31	—	85	—	
August 1	—	89	—	
„ 2	—	95	—	
„ 3	—	102	—	
„ 4	—	93	—	
„ 5	—	90	—	
„ 6	—	88	—	
„ 7	—	91	—	
„ 8	—	94	—	
„ 9	—	—	—	
„ 10	—	—	—	
„ 11	—	—	—	
„ 12	—	—	—	
„ 13	—	—	—	
„ 14	—	—	—	
„ 15	—	—	—	
„ 16	—	—	—	
„ 17	—	100	—	
„ 18	—	94	—	
„ 19	—	94	—	

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891.				
August 20	—	102	—	
„ 21	—	98	—	
„ 22	—	90	—	
„ 23	—	86	—	
„ 24	—	84	—	
„ 25	—	88	—	
„ 26	—	86	—	
„ 27	—	89	—	
„ 28	—	91	—	
„ 29	—	90	—	
„ 30	—	93	—	
„ 31	—	93	—	
September 1	—	95	—	
„ 2	—	86	—	
„ 3	—	75	—	Heavy rain.
„ 4	—	77	—	„
„ 5	—	85	—	
„ 6	—	81	—	
„ 7	—	87	—	
„ 8	—	92	—	
„ 9	—	85	—	
„ 10	—	84	—	
„ 11	—	82	—	
„ 12	—	84	—	
„ 13	—	82	—	
„ 14	—	84	—	
„ 15	—	87	—	
„ 16	—	92	—	
„ 17	—	94	—	
„ 18	—	96	—	
„ 19	—	84	—	Rain.
„ 20	—	86	—	
„ 21	—	84	—	
„ 22	—	88	—	
„ 23	—	—	—	
„ 24	—	—	—	
„ 25	—	—	—	
„ 26	—	—	—	
„ 27	—	—	—	
„ 28	—	—	—	

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. September 29	—	—	—	
„ 30	—	—	—	
October 1	—	—	—	
„ 2	—	—	—	
„ 3	—	—	—	
„ 4	—	—	—	
„ 5	—	—	—	
„ 6	—	—	—	
„ 7	—	—	—	
„ 8	—	—	—	
„ 9	—	—	—	
„ 10	—	—	—	
„ 11	64	84	—	
„ 12	64	76	W.	Fine.
„ 13	63	78	—	
„ 14	59	80	—	
„ 15	60	77	—	
„ 16	59	81	—	
„ 17	62	78	—	
„ 18	58	72	—	Cloudy.
„ 19	55	68	—	Cloudy. Slight rain.
„ 20	52	70	—	Fine.
„ 21	55	68	—	Rain.
„ 22	55	72	—	Fine.
„ 23	55	72	—	Heavy rain.
„ 24	54	62	—	„
„ 25	53	57	—	„
„ 26	54	60	—	Rain.
„ 27	53	57	—	Rain; stormy.
28	54	65	—	Fine.
„ 29	51	67	—	„
„ 30	52	68	—	„
„ 31	56	67	—	Heavy rain and thunder.
November 1	54	60	—	Thunder and heavy rain.
„ 2	53	65	—	Cloudy.
„ 3	51	65	S.W. to W.	Slight rain.
„ 4	53	63	S.W. to W.	Heavy rain.
„ 5	52	60	S.W. to W.	„
„ 6	53	60	S.W. to W.	Thunderstorm. Rain.
„ 7	50	64	S.W. to W.	Raining in country.

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. November 8	50	62	S.W. to W.	Raining in country.
„ 9	50	60	S.W. to W.	Tremendous rain.
„ 10	51	62	S.W. to W.	„ „
„ 11	51	65	W.	Fine.
„ 12	51	66	S.W.	„
„ 13	53	63	N.W.	Stormy and rain.
„ 14	54	57	W.	Rain.
„ 15	51	57	S.W.	Continuous rain. Eclipse of moon. Thunder.
„ 16	51	58	W.	Rain.
„ 17	47	56	E.	Fine.
„ 18	49	63	S.E.	„
„ 19	51	63	N.	„
„ 20	49	62	N.	„
„ 21	51	60	W.	„
„ 22	55	63	S.W.	Rain and thunderstorm.
„ 23	53	63	S.W.	Thunderstorm.
„ 24	53	61	S.W.	Heavy rain.
„ 25	50	60	W.	Rain.
„ 26	51	60	W.	Slight rain.
„ 27	45	53	W.	„
„ 28	49	57	W.	„
„ 29	47	56	W.	„
„ 30	45	54	W.	Fine and cold.
December 1	44	57	N.	Very fine.
„ 2	44	56	N.	„
„ 3	44	57	N.	„
„ 4	48	60	Variable.	„
„ 5	50	61	W.	„
„ 6	48	59	N.	„
„ 7	46	57	N.	„
„ 8	45	57	N.	„
„ 9	45	56	W.	„
„ 10	43	54	E.	„
„ 11	47	55	Calm.	„
„ 12	43	56	E.	„
„ 13	43	54	E.	Very fine. Cloudless.
„ 14	43	55	E.	„ „
„ 15	43	59	E.	„ „
„ 16	42	54	E.	„ „
„ 17	40	54	E.	„ „

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1891. December 18	40	56	E.	Very Fine, Cloudless.
„ 19	39	56	S.W.	A few light clouds.
„ 20	40	54	N.	Fine.
„ 21	40	55	Variable.	„
„ 22	45	53	W.	Rain.
„ 23	43	54	W.	Showery.
„ 24	42	55	W.	„
„ 25	45	54	W.	Fine.
„ 26	49	55	W.	Thick mist.
„ 27	42	54	E.	Fine.
„ 28	40	52	E.	„
„ 29	38	49	E.	„
„ 30	38	50	E.	„
„ 31	37	49	E.	„
1892. January 1	38	53	E.	„
„ 2	40	55	Variable.	„
„ 3	40	53	„	„
„ 4	40	54	„	Slight rain.
„ 5	48	55	W.	Rain.
„ 6	48	57	W.	„
„ 7	48	54	W.	„
„ 8	45	57	N.W.	Cloudy and stormy.
„ 9	48	52	W.	Rain.
„ 10	42	56	S.W.	Cloudy.
„ 11	47	56	W.	Showery.
„ 12	48	57	W.	Heavy rain. Storm.
„ 13	45	52	W.	„ „
„ 14	45	50	N.W.	Heavy rain.
„ 15	43	50	N.W.	Showery.
„ 16	39	54	S.W.	Rain.
„ 17	45	55	W.	Much rain. Stormy
„ 18	43	48	W.	Much rain. Cold.
„ 19	39	52	N.W.	Showery.
„ 20	42	53	N.W.	Rain.
„ 21	42	50	N.W.	Heavy rain.
„ 22	40	51	W.	Rain.
„ 23	45	50	Variable.	„
„ 24	43	53	E.	„
„ 25	45	56	W.S.W.	„
„ 26	43	54	Calm.	Fine.

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1892. January 27	42	54	Calm.	Fine.
„ 28	41	55	„	„
„ 29	40	57	E.	„
„ 30	42	56	E.	„
„ 31	40	57	W.	„
February 1	48	55	W.	„
„ 2	47	57	W.	Slight rain.
„ 3	46	55	W.	„
„ 4	47	57	W.	„
„ 5	50	59	Variable.	Cloudy.
„ 6	48	59	W.	Cloudless.
„ 7	43	61	E.	„
„ 8	43	63	E.	„
„ 9	42	60	Variable.	Fine.
„ 10	43	59	„	Cloudless.
„ 11	42	55	E.	Cloudless. Keen air.
„ 12	40	56	E.	„ „
„ 13	41	58	E.	Fine.
„ 14	42	62	N.	„
„ 15	45	60	W.	„
„ 16	50	59	W.	Showery.
„ 17	50	59	S.W.	„
„ 18	48	58	W.	Rain.
„ 19	50	63	W.S.W.	Gales. Heavy rain.
„ 20	50	65	W.	Very heavy rain.
„ 21	55	58	W.	Heavy rain.
„ 22	50	60	W.	„
„ 23	50	57	W.	Rain.
„ 24	50	60	W.	„
„ 25	50	60	W. to S.	Slight rain.
„ 26	51	67	Variable.	Heavy rain and thunder.
„ 27	51	60	W.	Rain.
„ 28	44	55	Variable.	„
„ 29	43	53	W.	Continuous rain.
March 1	45	57	W.N.W.	Rain.
„ 2	45	57	W.	Steady rain.
„ 3	50	60	Variable.	Rain.
„ 4	53	60	„	Much rain. Roads bad and food scarce.
„ 5	53	68	„	Cloudy. Warm. Sultry.
„ 6	55	62	S.	Stormy and showery.

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1892. March 7	50	54	S.W.	Violent rain storm.
„ 8	48	62	Variable.	Gale. Rain.
„ 9	50	62	S.W.	Stormy and showery.
„ 10	48	60	Variable.	Fine. Ground drying.
„ 11	50	61	„	Fine and breezy.
„ 12	50	59	„	„ „
„ 13	51	60	„	„ „
„ 14	50	60	W.	Showery.
„ 15	50	64	W.	Cloudy.
„ 16	53	70	W.	Fine.
„ 17	55	72	W.	„
„ 18	53	70	W.	„
„ 19	54	72	W.	Showery.
„ 20	55	72	W.	Fine.
„ 21	55	70	E.	„
„ 22	54	74	E.	„
„ 23	54	70	S.W.	Fine. Thunder.
„ 24	55	72	S.W.	Severe thunderstorm.
„ 25	56	66	Variable.	Cloudy.
„ 26	57	71	—	Fine.
„ 27	53	69	—	Rain.
„ 28	52	59	—	Very rainy.
„ 29	50	62	N.W.	
„ 30	50	59	W.	
„ 31	39	57	E.	Cold and dry.
April 1	48	62	W.	Fine.
„ 2	48	64	W.	Rain.
„ 3	48	60	W.	Heavy rain.
„ 4	50	65	W.	Heavy rain; roads bad.
„ 5	48	69	W.	Fine.
„ 6	52	69	Variable.	„
„ 7	54	73	„	„
„ 8	55	76	—	Tremendous thunderstorm from 5 to 7 p.m. and very heavy rain.
„ 9	50	64	W.	Rain.
„ 10	53	66	W.	„
„ 11	54	64	W.	„
„ 12	50	60	—	Heavy rain. Thunder.
„ 13	50	57	—	Showery.
„ 14	52	67	W.	„
„ 15	55	65	W.	Showery. Thunder.

Table C.—*continued.*

Date.	Min. F.	Max. F.	Wind.	Remarks.
1892. April 16 - -	48	60	W.	Rain.
„ 17 - -	48	67	—	Fine.
„ 18 - -	48	69	W.	„
„ 19 - -	52	70	W.	Fine. Rainy night.
„ 20 - -	54	72	Variable.	Rain during night.
„ 21 - -	51	59	„	Continuous rain.
„ 22 - -	53	70	W.	Fine.
„ 23 - -	55	70	W.	„
„ 24 - -	54	75	E.	„
„ 25 - -	55	74	E.	„
„ 26 - -	55	76	Variable.	„
„ 27 - -	57	70	N.W.	Showery.
„ 28 - -	54	74	E.	Fine.
„ 29 - -	55	68	E.	„
„ 30 - -	56	78	Variable.	„

APPENDIX No. V.

NOTES, MOSTLY STATISTICAL AND ETIOLOGICAL, ON THE PREVALENT FEVERS OF ALEXANDRIA, 1889-1892, WITH ONE PLAN AND SIX CHARTS.

By Surgeon-Captain F. J. Morgan, Army Medical Staff.

Simple Continued Fever—Enteric Fever—Ague.

Alexandria, located at the western extremity of the Delta, is situated partly on the mainland and partly on a T-shaped peninsula. The site of the city consists of an upper layer of alluvium and sand, and a substratum of soft tertiary limestone. The several large lakes to the south of the city, together with the sea to the north, make its position and climate almost insular. The climate for the greater part of the year is most agreeable. A cool N.N.W. wind blows almost continually. It is interrupted at intervals during April, May, and June, by a hot, dry, and dust-laden S.E. desert wind, which blows for two or three days at a time. During August, September and October the air becomes very damp, and the climate enervating. A moderate rainfall occurs between November and April, the average yearly fall being 8 inches.

The surface conservancy of the city is well attended to, but there is an almost entire absence of drainage and sewerage in the native parts. Large cess-pits exist in the basements of the houses, and the contents leak into the porous soil.

The European quarter is fairly well drained and sewered, but the drains and sewers open into the old harbour not far from the shore.

The water supply of the city is drawn from the Mahmoudeyeh Canal. This canal is about 40 miles long, and taps the Rosetta branch of the Nile. Villages exist along its banks, and the inhabitants use the stream as a means of disposing of excreta, dead animals, and all sorts of rubbish. Native cemeteries are also to be found along its banks. The water is filtered through sand by the Water Company, and distributed through pipes. It is usually boiled and filtered once or twice again in the houses, and is then a soft and very fair drinking water. Shallow wells exist in the native quarters of the city, and these must be much polluted by the sewage-soaked soil in which they are situated. The drinking shops and resorts of the soldiers are in such a part of the city, and the men must be frequently tempted to drink lemonade and other drinks made with well-water. The latrines and urinals of the drinking shops are in as insanitary a condition as possible, yet this is often the part of the house in which is kept the receptacle for drinking water.

Some of the sanitary arrangements in force in the garrison may be here alluded to.

On the arrival of a regiment at the station, the men are cautioned as to the danger of drinking water that has not been boiled and filtered, and told to avoid lemonade, other such like drinks, and milk when out in the town.

The dry-earth system for the disposal of excreta is everywhere in use. The soil is removed to a distant part of the outskirts of the town by carts. Slops, collected in catch-pits, are carted away and emptied into the sea at some distance from the barracks.

CHART No. I.

Comparison of Prevalent Diseases.

Alexandria 1889-1892.

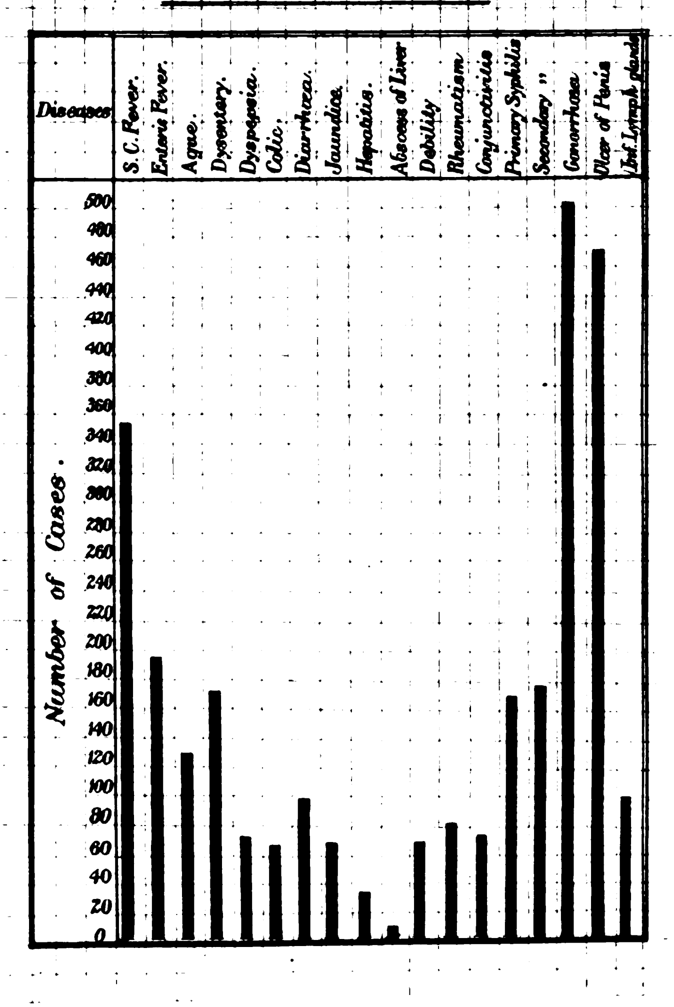


CHART No. II.

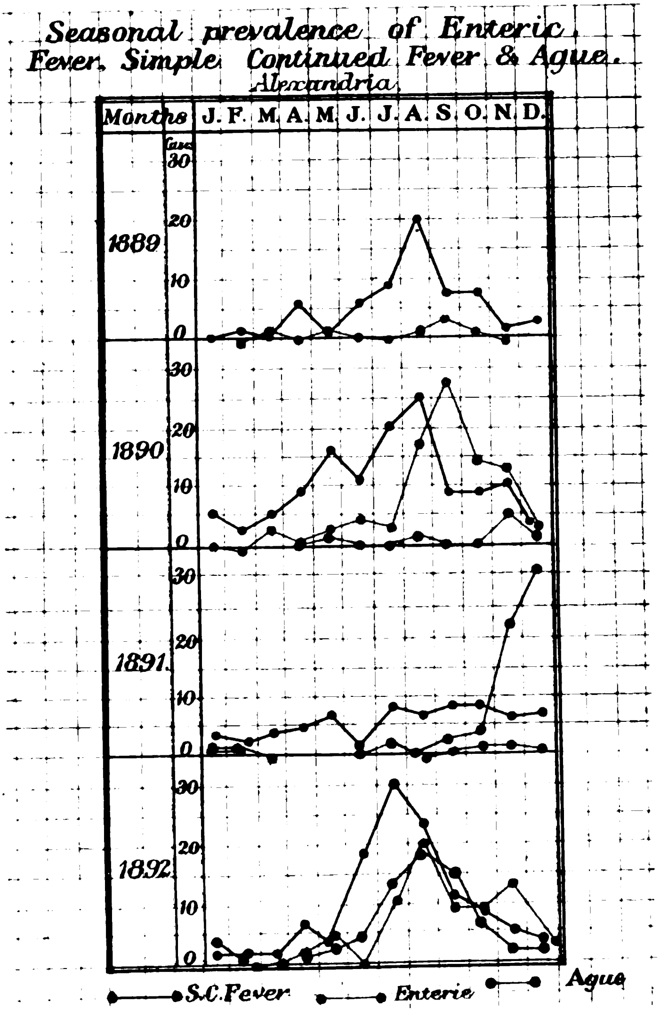

Seasonal prevalence of Enteric Fever, Simple Continued Fever & Ague.
Alexandria.
Months
J. F. M. A. M. J. J. A. S. O. N. D.
Cases
30
20
10
0
1889
1890
1891
1892
S.C. Fever
Enteric
Ague

CHART Nº III.

ENTERIC FEVER.

Influence of Age on Admission, Recovery and Death.

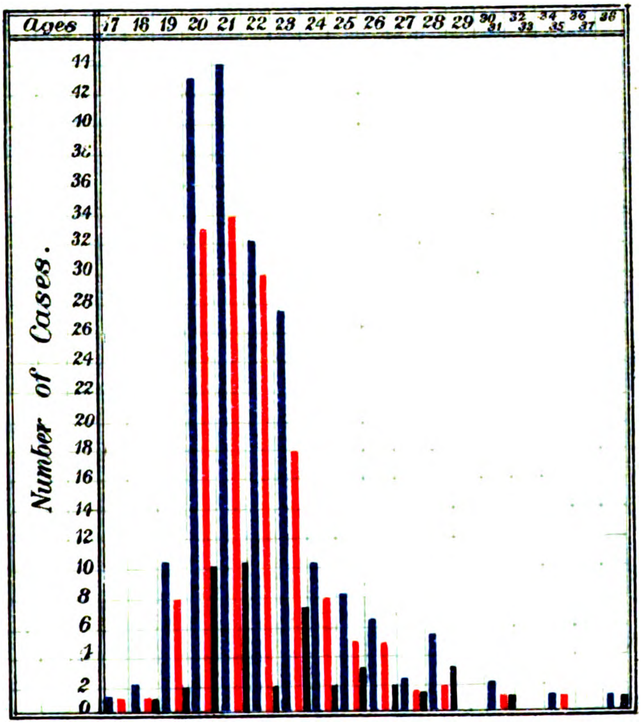


CHART No. IV.

ENTERIC FEVER.

Influence of Length of Service on Admission, Recovery and Death.

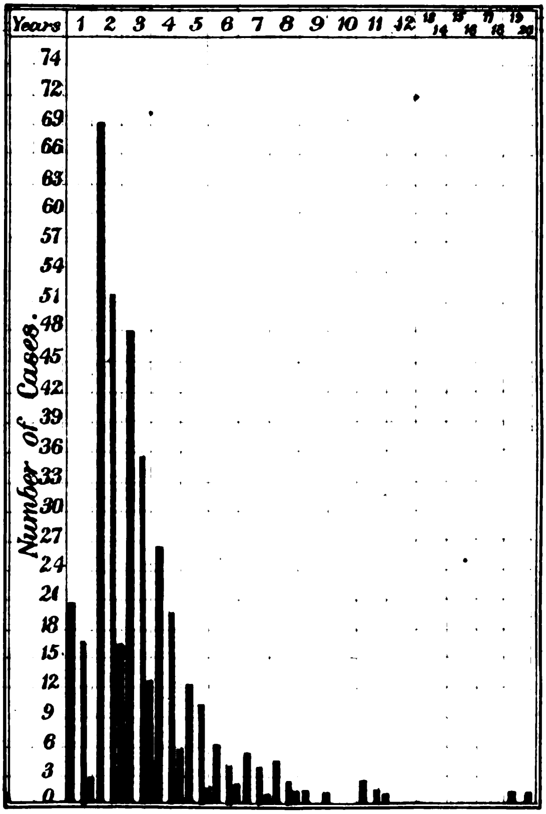


CHART No. V.

—ENTERIC FEVER.—

Influence of Period of residence on Admission, Recovery and Death.

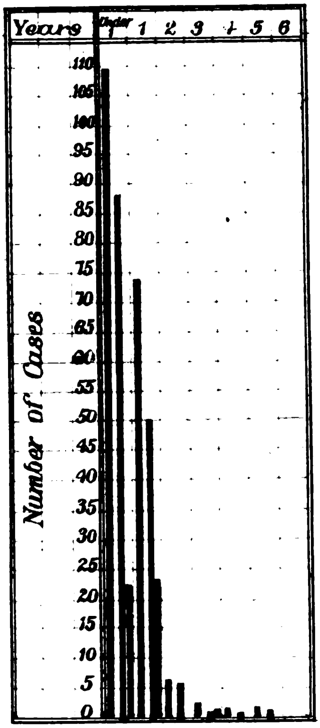
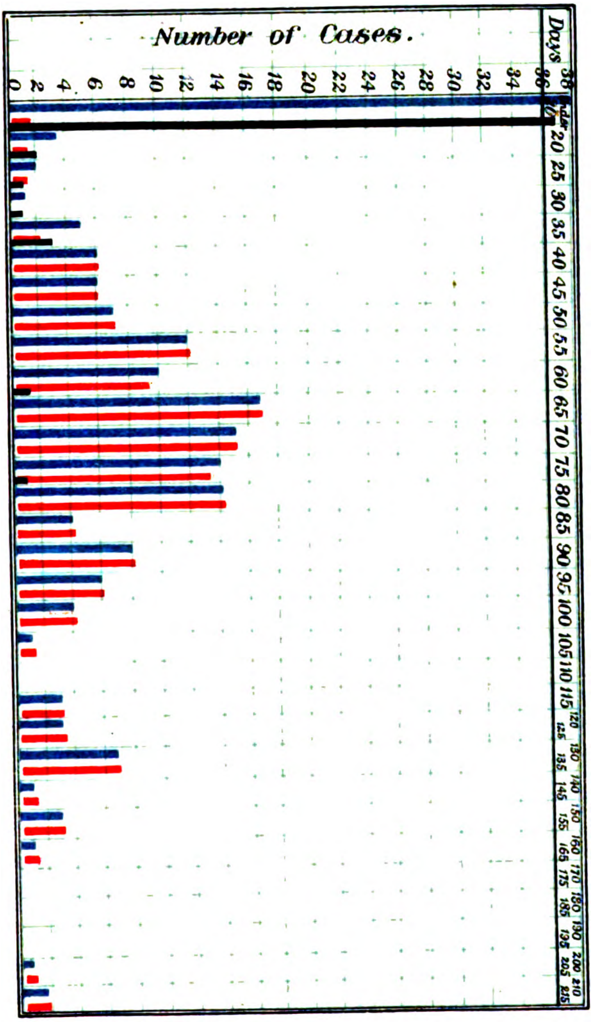
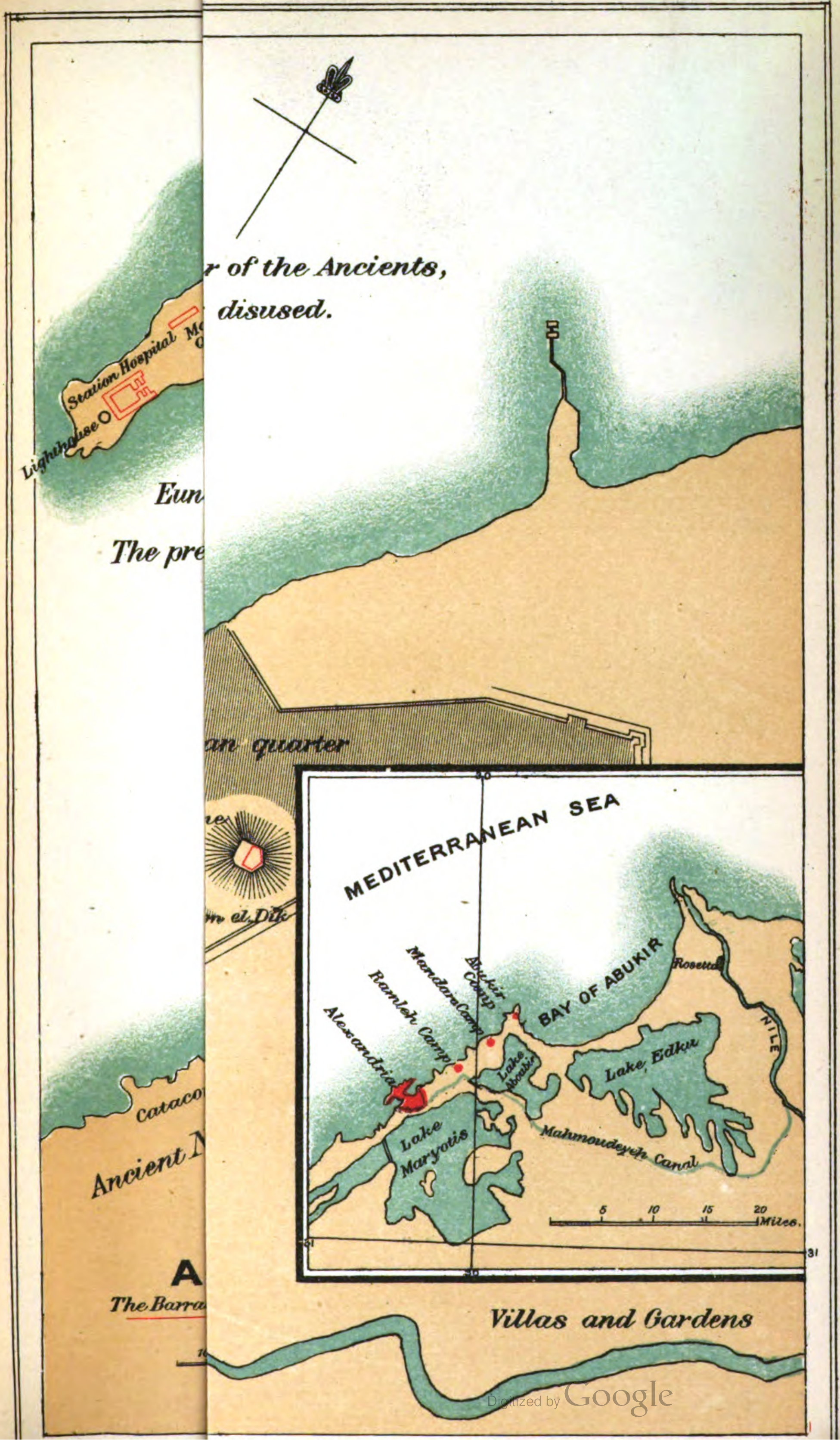


CHART No. VI.

ENTERIC FEVER.

Duration of Cases.




r of the Ancients,
disused.
Station Hospital
Lighthouse
Me
O
Eun
The pre
an quarter
ne
n el Dik
Catacom
Ancient N
A
The Barra
10
Villas and Gardens
MEDITERRANEAN SEA
BAY OF ABUKIR
Rosetta
NILE
Abukir Camp
Mandara Camp
Ramleh Camp
Alexandria
Lake Abukir
Lake Edku
Lake Maryotis
Mahmoudeyeh Canal
5
10
15
20
Miles.
30
31

Water for drinking purposes is boiled, and then distributed to the barrack-rooms, where it is filtered through large porous earthenware filters (the filter of the country), the water dripping into a pan beneath, enclosed in a box and provided with a door.

Flannel belts are issued to the troops, and their use is compulsory.

Serge clothing is worn in winter, and khakee cotton and white helmets in summer, except in the early morning and evening.

Musketry and health camps afford a change of air to most of the troops annually.

The regiments stationed at Alexandria during the period were:—

1889.	2nd R. Irish Rifles	- January to July	- From Gibraltar.
	1st Dorset Regiment	- July to December	- From Malta.
	1st Yorkshire Regiment	- August -	- From Cyprus.
1890.	2nd Suffolk Regiment	- All the year -	- From England.
1891.	2nd Suffolk Regiment	- January and February.	
	1st Devon Regiment	- February to December	- From England.
1892.	1st Devon Regiment	- All the year.	

The extent to which fevers prevailed, in comparison with other diseases, is seen in Chart No. I., where the total admissions to hospital for each disease noted are shown.

The average strength of the garrison for each year, with the admissions to hospital, deaths, and invaliding, due to the fevers under consideration is shown in the following table:—

Year.	Average Strength.	Simple Continued Fever.			Enteric Fever.			Ague.		
		Admissions.	Deaths.	Invalids.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.	Invalids.
1889 -	1,085	64	None.	2	14	2	3	1	None.	None.
1890 -	905	122		—	95	20	2	10		
1891 -	880	63		3	9	1	3	58		
1892 -	916	105		—	77	22	5	59		
Total -	3,786	351	—	5	195	45	13	128	—	—

Chart No. II. illustrates the seasonal prevalence of fevers by months and years. The annual fall in the level of the Mahmoudeyeh Canal (the source of the Alexandria water supply) also occurs during the period in which the fever curves are rising. The lower water level in the canal, producing stagnation in an always grossly polluted water, probably has much to do with the increased fever rate of the summer months, more particularly in the case of enteric fever.

ANALYSIS OF THE CASES OF SIMPLE CONTINUED FEVER.

Three hundred and fifty-four cases were so diagnosed during the period. In 34 of these the nomenclature of the disease had been changed to or from simple continued fever, some other disease having preceded or followed it; these cases have been disregarded. The remaining 320 cases were under treatment in hospital for the periods shown in the following table:—

DAYS IN HOSPITAL of 320 Cases of Simple Continued Fever.

——	Cases.	Per Cent.
1 and under 5 days	12	3·8
5 " 10 "	75	23·4
10 " 15 "	69	21·6
15 " 20 "	30	9·4
20 " 25 "	34	10·6
25 " 30 "	23	7·2
30 " 40 "	31	9·7
40 " 50 "	19	5·9
50 " 60 "	9	2·8
60 " 70 "	7	2·2
70 " 80 "	5	1·6
80 " 90 "	1	·3
90 " 100 "	2	·6
100 " 110 "	2	·6
110 " 120 "	1	·3
Total	320	100·0

If a division be made between cases under and over 20 days in hospital, the former group will number 186, or 58 per cent. and the later 134, or 42 per cent. The first group may without further investigation be regarded as non-enteric, for the duration of fever would have been about 10 days in the longest and in the majority of cases only a few days, the patient being kept in hospital for some time after the cessation of fever, to recover from any resulting debility and to make sure of his complete recovery.

In this group are also contained many cases of slight ailment of few days' duration, caused by exposure to the sun, errors of diet, drinking, and chills, which being accompanied by a little fever and for want of a more appropriate name in the official nomenclature of diseases, are diagnosed simple continued fever. The cases of influenza, which occurred in the garrison of Alexandria during the first year of its prevalence, were so diagnosed.

In the 134 cases of simple continued fever remaining 20 days and over in hospital notes have been found of 106 cases, and these (as regards their true nature and causation) may be grouped as under:—

(i.)	Longer cases of simple continued fever	65
(ii.)	Cases of the type known as Malta fever	19
(iii.)	Mild cases of enteric fever without signs sufficiently characteristic for diagnosis	12
(iv.)	Ague	5
(v.)	Various, mostly due to local inflammations	5

(i.) The symptoms recorded in this group vary from anorexia, malaria, slight headache, coated tongue, constipation, and moderate fever diminishing steadily day by day, in the milder cases; to anorexia of longer duration, severe headaches, aching of the body and limbs, a foul tongue sometimes tremulous at first, constipation or diarrhœa, drowsiness by day and restlessness at night, with higher and more persistent fever. Both varieties, however, respond to treatment by aperients, diaphoretics, quinine, and symptomatic remedies (with the exception of a few cases, which were probably mild and obscure cases of enteric fever), and recovered steadily, leaving debility of only short duration.

(ii.) The 19 cases of Malta fever occurred mostly in men of the 1st Dorset Regiment in the autumn of 1889. Some cases of fever in the Yorkshire Regiment ran a very similar course, and a few instances occurred in men of the Suffolk and Devonshire Regiments, who had never lived in either Malta or Cyprus. This disease was characterised by very prolonged and irregular fever, the patient seldom appearing seriously ill, and very frequently expressing himself as not feeling at all ill with a temperature from day to day of 102° or 103° in the evening, and falling more or less in the morning. The tongue was in most cases clean, moist, and natural. Persistent constipation was usual. Rheumatic pains in the body and limbs were sometimes complained of. As the case proceeded, anæmia and debility supervened and were most pronounced. Treatment was of little avail in influencing the course of the fever, but salicylate of soda seemed to have the most lasting influence for good. The disease gradually wore itself out after the patient had remained two or three months in hospital, and in 5 cases invaliding for change of climate to England was necessary.

(iii.) In the 12 cases considered to be instances of mild enteric fever, this probability was noted in nearly every case by the recording medical officer. The temperature chart was in some cases fairly typical of a mild form of the disease, and some of the following symptoms occurred in each case :—Epistaxis, diarrhœa with yellow stools, abdominal pain and tenderness, doubtful "red spots," and in a few instances there was a return of fever on a change from milk and beef tea to a more substantial diet. The cases, however, during their progress did not present a sufficient number of signs to justify a diagnosis of enteric fever being made. Some of the cases in Group (i.), before alluded to, of longer duration and of greater severity, were also probably cases of mild enteric fever, but evidence was wanting on which to form a diagnosis.

(iv.) The 5 cases of simple continued fever, grouped as ague, all occurred in the Yorkshire Regiment. They responded readily to quinine, and were characterised by intermittent paroxysms, though of a modified nature. More anæmia and debility followed than is usual after simple ague of equal duration.

(v.) The remaining 5 cases were complicated with colic, mild dysentery, and inflammation of the external meatus, and the fever was probably due to the local affection.

It will be seen from this analysis that (with the exception of the cases in groups (ii.), (iii.), (iv.), and (v.), numbering 41 in all, a very small proportion of mild cases of enteric fever in group (i.), and those cases of slight ailment included for want of a more appropriate name), the very large proportion of the 320 cases were really instances of simple continued fever; that is to say, a fever of short duration usually, quickly amenable to treatment, not prone to relapse on a return to solid food, leaving no more than moderate debility, soon recovered from, and having no mortality.

ENTERIC FEVER.

This disease presented the features usually seen wherever it prevails. Cases of all degrees of severity were met with, from the mild case only able to be diagnosed as such late in its course and from its characteristics as a whole, to the quickly fatal case with high fever or hyperpyrexia, pronounced nervous symptoms, and failing heart.

The mortality to cases admitted was 23 per cent. Had the mild cases alluded to in the analysis of cases of simple continued fever (about 20 altogether) been included, the mortality would have been under 21 per cent. The rates of mortality for the four years were :—1889, 14·3 per cent.; 1890, 21 per cent.; 1891, 11 per cent.; 1892, 28·57 per cent. The disease was epidemic in 1890 in the 2nd Suffolk Regiment, recently arrived from England, and in 1892 in the 1st Devon Regiment in its second year of service in the Command. The meteorological conditions of Alexandria are so constant year by year that they afford no explanation of the relative immunity of the Devon Regiment in its first year of service in the Command.

The regiments were on equal footing as regards recent arrival from England, seasons of year on arrival, ages and years of service of the men, and as to the barracks they occupied. The only explanations available are, that on the arrival of the Devonshire Regiment its officers and men had before them the history of the previous year, and that on this account they were glad to avail themselves of the recommendations freely given as to the sanitary precautions to be taken in order to avoid the disease.

The statistical charts which follow (Nos. III. to VI.) will need little or no explanation. They illustrate the susceptibility to the disease between the ages of 20 and 24, the increased liability to a fatal termination when the disease is contracted later in life, the proneness of the individual to attack during the first few years of residence in a place where enteric fever is endemic, the large proportion of deaths occurring in the 19 days following admission to hospital, and the time under treatment of all the cases admitted. In each chart the total admissions are shown by a blue line, the recoveries by a red line, and deaths by a black line.

The scale on the left-hand side of each chart gives the numbers admitted, recovering, and dying during the periods into which the charts are divided.

The upper horizontal row of figures gives, in the several charts, the years of age, service, and service in the Command, and in the last chart the days under treatment in hospital.

The Influence of Age on Admissions, Recoveries, and Deaths.

With Chart No. III. must be considered the following table of strengths by ages, in which is shown the large proportion of men of from 20 to 24 years of age, always present in the Command. This numerical element would account for 56·6 per cent. of attacks of enteric fever between the ages of 20 and 24 as compared with the other age groups. Yet over and above this the special tendency of the disease to occur at this time of life is shown by the figures in italics at the foot of the table, where it is shown that 80·3 per cent. of all the cases occurred between those ages.

TABLE of STRENGTH by AGES.

Year.	Average Strength.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 and upwards.
1889 - - -	1,085	53	649	285	64	34
1890 - - -	905	138	524	150	66	27
1891 - - -	880	181	422	210	44	23
1892 - - -	916	97	550	210	42	17
Total - -	3,786	469	2,145	855	216	101
Per-centages - - - -		12·4	56·6	22·6	5·7	2·7
Per cent. of attacks of Enteric Fever - - -		*6·7*	*80·3*	*10·9*	*1·5*	*·5*

The Influence of Period of Service on Admissions, Recoveries, and Deaths.
(Chart No. IV.)

The proportion of men serving in the Command at the different periods of service is not available from the returns, but as such a large proportion of cases occurred in the two regiments which had only recently arrived from England for tours of service abroad, a very large number of men would have been in their first few years of service.

Influence of Period of Service in the Command on Admissions, Recoveries, and Deaths. (Chart No. V.)

The tendency of the disease to affect recent arrivals in a place where enteric fever is endemic is here shown.

This is particularly well shown in the case of the Garrison Staff, Royal Artillery, and Departments serving five years and over in the Command. They number 14·5 per cent. of the total average strength for the four years; they are seldom moved to other stations unless when time expired or on completion of their term of service abroad; so that a large proportion of them would be men of over two years' service in the Command. Only 5·2 per cent. of cases occurred in men with two and more than two years' service in the Command.

Chart No. VI. shows the Number of Days in Hospital for Admissions, Recoveries, and Deaths.

The cases shown in the chart as recoveries in "under 20 days," "20 days," and "25 days" (three in all) were probably errors in diagnosis, the cases not being enteric fever at all. This chart brings out the interesting fact that only 20 per cent. of deaths occurred after the 19th day from admission to hospital.

DISTRIBUTION of SICK by BARRACKS.—Showing the Barracks from which the Sick came 1889 to 1892.

1889.

Quarter.	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.			
Diseases.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.
Outer Barracks	180	1	2	3	228	5	11	9	300	4	34	16	132	2	13	11
Kam el Dik	16	—	—	—	8	—	—	—	7	2	2	1	7	—	—	1
Police Hut	1	—	—	—	1	—	—	—	2	—	—	1	7	—	—	—
Red Barracks	3	—	—	—	6	—	—	1	—	—	—	—	—	—	—	—
Station Hospital	1	—	—	—	3	—	—	1	5	—	—	1	6	—	1	—
Mandara Camp	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ramleh Camp	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1890.																
Outer Barracks	239	3	12	2	230	10	36	18	185	45	53	43	156	13	13	18
Kam el Dik	9	—	3	1	9	—	—	—	7	1	—	1	11	—	2	3
Police Hut	3	1	1	—	1	—	—	—	3	—	—	—	2	—	—	—
Red Barracks	1	—	—	—	4	—	—	—	1	—	—	1	6	1	2	1
Station Hospital	4	—	—	—	1	—	1	—	6	2	—	—	4	2	1	—
Mandara Camp	—	—	—	—	—	—	—	—	—	—	—	—	84	16	10	19
Ramleh Camp	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Distribution of Sick by Barracks—*continued.*

1891.

Quarter.	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.			
Diseases.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.
Outer Barracks	247	4	10	6	225	—	12	21	181	—	18	17	192	4	39	8
Kam el Dik	2	—	—	1	3	—	—	—	5	—	2	—	8	—	—	—
Police Hut	—	—	—	—	—	—	—	—	—	—	—	—	3	—	1	—
Red Barracks	2	—	—	—	2	—	—	1	4	1	—	2	29	—	11	2
Station Hospital	2	—	1	—	5	—	—	1	2	—	—	—	5	—	—	—
Mandara Camp	—	—	—	—	—	—	—	—	—	—	—	—	63	1	24	6
Ramleh Camp	—	—	—	—	10	—	—	3	51	—	5	3	—	—	—	—

1892.

Quarter.	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.			
Diseases.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.
Outer Barracks	200	1	14	6	190	7	23	9	211	27	69	10	103	6	10	6
Kam el Dik	11	—	1	—	9	—	—	—	14	—	3	—	6	—	1	—
Police Hut	2	—	—	—	4	—	—	—	3	—	1	1	2	—	—	—
Red Barracks	18	—	2	—	7	—	1	—	10	—	—	—	23	1	1	—
Station Hospital	3	—	3	—	3	—	1	—	8	2	2	1	4	2	—	1
Caracol Attarim	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	—
Mandara Camp	21	—	—	2	34	—	2	—	153	13	29	5	—	—	—	—
Aboukir Camp	—	—	—	—	—	—	—	—	—	—	—	—	10	3	2	1
Ramleh Camp	—	—	—	—	—	—	—	—	—	—	—	—	80	12	12	5

TOTALS OF PRECEDING TABLES.

—	Totals.				Proportion of Enteric Cases admitted from each Barrack.
	All Diseases.	Enteric.	Other Fevers.	Diarrhœa and Dysentery.	
Outer barracks	3,199	132	369	203	1 in *24·2*
Kam el Dik	132	3	14	8	*44*
Police Hut	34	1	3	2	*34*
Red Barracks	116	3	17	8	*38·6*
Station Hospital	62	8	10	5	*7·7*
Caracol Attarim	2	1	—	—	*·2*
Mandara Camp	355	30	65	32	*11·8*
Aboukir Camp	10	3	2	1	*3·3*
Ramleh Camp	149	12	17	11	*12·4*

Before 1891 a separate account was not kept of the sick coming from camp, and the figures in the last quarter of 1890 are only approximate in this respect. The large number of cases admitted from the camps in 1890 and 1892 occurred in the autumns of the epidemic years. The troops, in considerable numbers, were moved under canvas for change of air and surroundings, but on each occasion a considerable number of cases continued to be admitted to hospital. The men were not strictly confined to camp, being allowed to visit Alexandria "on pass," and frequent changes between the companies left in Alexandria and those in camp were made with the intention of giving as many men as possible the advantages of change of air, &c. The water supply was also the same as that in barracks, water being conveyed in a tank, by rail, to the camps.

At the end of the table, the proportion of cases of enteric fever to all cases of disease admitted from each barrack or camp is shown in italics. For instance, there were 3,199 cases of all diseases admitted to hospital from the "outer barrack" at Ras-el-Teen; of these, 132 were cases of enteric fever, or a proportion of 1 case in every 24·2.

The healthiest station in Alexandria is undoubtedly the hill known as Kam-el-Dik, on the summit of which the artillery fort and barracks are situated. The Red Barrack at Gabarri comes next. It is situated in a bend of the Mahmoudeyeh Canal, where this stream approaches the sea, and is thus exposed to any emanations from mud left when the canal level falls in the summer months. Adjacent to it is a large rag and bone factory from which most unpleasant smells come when the wind is in a certain direction. Yet the troops quartered there have enjoyed very good health. Since the 3rd quarter of 1890 a detachment of 50 men or more of the infantry battalion has been quartered at Red Barracks in addition to the men of the Army Service and Ordnance Store Corps, always stationed there. During both epidemics this detachment escaped with relative or even almost complete immunity. This has been attributed (i.) to the barrack rooms being situated on the first floor and at a considerable distance from the ground; (ii.) to the distance from the rooms of the nearest water-tap, so that a thirsty man would almost invariably use the boiled and filtered water near by, rather than go to the longer distance for a drink, and (iii.) by the men themselves, to the fewer drills and parades occurring there, in comparison with outer barracks, where during the hot months the men would come in from drill or parade, tired and thirsty, would run to the nearest place where a drink could be obtained (very often a water-tap, on account of the barrack room filter not being equal to such a large and sudden demand), and then lie down to sleep. During nearly the whole of the epidemic of 1892 the same 50 men of the Devonshire Regiment remained at the Red Barrack, those in charge were keenly alive to the necessity of boiling and filtering the water for drinking and attending to every other sanitary recommendation made; the men were required to attend few drills and parades, and so had time and inclination for games and other healthy amusements.

The large proportion of admissions from the Station Hospital is accounted for by the men of the Medical Staff Corps contracting the disease while nursing cases of enteric fever.

Outer Barracks, Ras-el-Teen, where the majority of the troops are quartered, is an old Egyptian barrack repaired and refitted for the use of our troops. It is situated on the sea front of the peninsula. Most of the barrack rooms are large, lofty, and airy, and at some height from the .ground outside. Drains or sewers, as usually understood, do not exist in the barrack, any that there were having been cleaned and filled with earth.

Many of the rooms are floored with asphalte, the others are boarded and have a ventilated air space of several feet in depth, under the floor, two or three feet of clean sand, and a layer of some inches of ashpalte under the sand, forming the ground under the rooms.

Although a special sanitary inspection of the room and vicinity from which each case came was made, no particular cause was ever able to be found for the disease, and the cases were pretty equally distributed over the whole barrack.

AGUE.

This disease in Alexandria is contracted only in camp, it has always been of mild type, easily curable by quinine, and has not been followed by any after effects.

It has varied in prevalence as the site of the camp for musketry has been necessarily changed from time to time. (See chart of seasonal prevalence of fevers.) At one time very prevalent, when the camp at Mex was situated in the hollow midway between the sea and Lake Maryotis, it disappeared almost entirely on the camping ground being changed to a high ridge over the seashore. It next prevailed considerably in the autumn and winter months of 1891, when the camp at Mandara was situated on the slope of a hill adjacent to a recently reclaimed lake. The admissions to hospital ceased on the camp being broken up for the winter, but increased again in the summer of 1892, the camp being re-established on the same site.

There were no deaths or invaliding due to ague.

APPENDIX No. VI.

NOTES AND OBSERVATIONS ON "ENTERIC FEVER," THE RESULT OF THREE YEARS' EXPERIENCE OF THE DISEASE IN MHOW, CENTRAL INDIA.

By Surgeon-Major C. G. D. Mosse, F.R.C.S.I., Army Medical Staff.

My reason for taking "enteric fever" as the subject of my essay is, that it is one in which I am particularly interested, and it is the disease which has come under my own personal observation, far more than any other, since my arrival in India. I have had the opportunity of treating and observing the majority of cases of enteric fever which have occurred in Mhow during the last three years, as, for the greater part of that time, I have been doing duty at the hospital where nearly all such cases have been treated.

In these notes it is my intention:—

I. To make some general remarks on the disease, with special reference to its diagnosis, and its connexion with "remittent" and "simple continued fever."

II. I shall then discuss the question as to the identity of enteric fever, as met with in England, and the disease as I have observed it in Mhow.

III. And finally I shall draw special attention to the treatment of this disease at Mhow by tartarated antimony.

I.

I shall begin by noting one fact as regards enteric fever at this station in 1889—before my arrival—as it is in my opinion a very important one, and one which made a marked impression on me, when I first began my treatment of "enteric" cases in 1890. In 1889 enteric fever broke out in a very severe form in this station. In the annual report for that year it is shown that there were 118 cases with 29 deaths, but amongst the cases admitted from the first as "enteric" I noticed, on perusing the admission and discharge book of the hospital a considerable number of admissions for "simple continued fever" during the prevalence of the "enteric" epidemic. I further noticed that of these admissions for simple continued fever many had been crossed out in red ink and "enteric fever" entered instead, the post-mortem examinations having shown an error in diagnosis in these cases. I shall again allude to these facts later on, and shall now note some other facts in connexion with the disease. I shall avoid quoting statistics, and shall simply state facts, which have been evident to me, viz., that three fourths at least of the cases of enteric fever occur in men under 25 years of age, and under 2 years' service in the country. I think recent arrival in India is an even more powerful factor than youth, in predisposing to this disease.

The months of greatest prevalence of the disease, as a rule, are July, August, and September, during and towards the end of the rainy season, at the same time that so-called remittent and simple continued fevers are most prevalent.

Regarding the cause of the prevalence of enteric fever at Mhow, nothing definite can be discovered, notwithstanding frequent enquiries and investigations. The water supply from Baircha reservoir, 5 miles distant, is abundant and good. Careful inquiries have shown that milk cannot be assigned as a factor in the causation of the disease, nor can it be shown that defective sanitation has anything to do with the outbreaks.

I will now proceed to make some remarks regarding the connexion of enteric fever in India with remittent and simple continued fever, and the difficulties of diagnosis. I think there is a very close connexion between the "enteric fever" which one sees in this country and a great many of the fevers, which are shown in returns as "remittent," and "simple continued fevers." In a large number of these cases one sees fever which runs a course identical with that of enteric, a fever lasting two, three, or four weeks, though there may be an absence of abdominal and other symptoms, usually held to be indicative of this disease. The more I see of these types of fever, the more I am led to believe that they are all, or nearly all, cases of true Indian enteric fever.

The conclusions, therefore, which I have come to, as to the relation of "enteric" to other fevers usually shown as "remittent" and "simple continued," are that nearly every case of a continued fever, in which we have a temperature keeping above normal for 10 or 12 days, may be diagnosed as enteric fever, if, after a careful examination of the patient and all his organs, no other cause for the continued high temperature can be discovered, and if the fever does not give way to a course of quinine.

The following facts, I think, support my conclusions:—The fact noticed before, that in 1889, in every case of simple continued fever which died, there were found enteric lesions, which necessitated an alteration in the diagnosis after death. On looking through the returns for that year, 1889, I find, that in addition to those cases of simple continued fever which died, there were 20 cases which recovered, but which remained in hospital over 21 days the majority were 30, 40 or more days in hospital. My belief is that the greater number of these were really cases of enteric fever. And within the last three years it has come under my own personal observation, that every case of fever, whether diagnosed as remittent or simple continued which has died, has, on the post-mortem table, shown intestinal ulceration.

Other facts which help to strengthen my belief are, that these so diagnosed remittent and simple continued fevers are prevalent at the same time of year as enteric fever, and that they attack the same class of men, viz., the young men under 25 years of age, and those recently arrived in the country, who cannot have been exposed, to a great extent, to malarial influences. Besides, on looking over notes of cases in the case books, I find that in a great many instances, the symptoms noted of simple continued fever cases which recovered, were almost the same as were noted in those cases of simple continued fever which died, and which the autopsy showed to be really cases of enteric fever. In the cases of enteric fever which I have seen here, more often than otherwise there has been an absence of typical signs and symptoms, so that the absence of these does not justify the exclusion of enteric fever in making a diagnosis.

Again, I have not met with a single case of continued fever, with or without typical symptoms, which had been diagnosed as "enteric," in which an autopsy failed to show intestinal ulceration.

The practical importance of diagnosing these doubtful cases as "enteric" is, that more care might very often be exercised in their dieting, and a more gradual return to solid food allowed; also more care taken in the disinfection of the evacuations, which, according to the belief of many, are chiefly concerned in the propagation of this disease.

I think there is often far too great a hurry in the diagnosing of these continued fevers, and if more time were given to the observation of such cases, before making a diagnosis, one would not see so many alterations in "Admission and Discharge" books.

I will conclude this part of my paper by saying that I think it would be wise to look upon every case of "remittent" or "continued fever" as "enteric," until we can prove, by the discovery of some other definite cause for the fever that it is not so.

II.

I next wish to make some remarks on the following question:—

Is this enteric fever which is met with in India, and as I have observed it at Mhow, identical with the specific enteric fever met with in England? With reference to this question, I shall notice some possible differences in causation, and make some remarks on special influences in this direction, due to climate, and which do not exist in England, and I shall draw attention to appreciable differences in the symptoms and pathology of the disease, as met with in India, and as seen in temperate climates.

My personal experience of tropical enteric is limited to my three years' residence in Mhow, I therefore cannot be dogmatic in my opinions. I only wish to state certain ideas which have forced themselves upon me.

I believe that we have in India an enteric fever, in the sense of there being intestinal ulceration present, but that the disease in this country differs in a great many respects from that seen in England. From what I have before noted on the subject of diagnosis I think I have shown that this Indian enteric fever is so changed in its characters, and the symptoms so indefinite, that it is often recognized, not by its symptoms, but by its post-mortem appearances.

As to its causation. I have before noted, that no definite cause can be discovered in Mhow to account for the prevalence of the disease.

It is, of course, impossible to say, that—in a cantonment like Mhow where it prevails more or less every year—it is not due to the specific poison or contagium of previous enteric cases, as is almost invariably believed to be the cause of the disease in temperate climates, a like belief being held by many as to its origin in India; but if we believe that this specific contagium is the constant and only cause of the disease in India, it seems impossible to account for the origin of those cases, which have so often occurred in the experiences of military medical officers when on active service in this country, and in other tropical countries — isolated cases which have appeared amongst troops previously healthy, and in a country which had not been occupied before by Europeans, and where enteric had been unknown before the arrival of the troops—cases occurring *de novo*—and which cannot be accounted for by the specific theory; it is impossible to satisfactorily explain the origin of such cases, if we believe that a specific enteric poison is the sole cause of this disease. If, therefore, there be only one origin of enteric fever in England, and that a specific one, as is generally believed, it appears to me that our tropical enteric may, in its origin, often differ from that met with in temperate climates.

I think that the pythogenic theory of origin will more satisfactorily explain and account for the prevalence of enteric fever in India.

Where there is a bazaar, and there is one near every cantonment, notwithstanding all sanitary precautions, the naturally dirty habits of the natives cannot be overcome, and there is always present abundant material for the generation of any filth disease. The pythogenic theory will also explain the origin of most—if not all—cases met with in the field, as well as in cantonments, though in this cantonment, no definite unsanitary condition can be fixed on as a cause of the disease.

It is certainly strange—if enteric fever be a filth disease—that it is not prevalent in the bazaar amongst the natives; as a matter of fact, it is very rare amongst the native population in Mhow. As staff surgeon with charge of the followers' hospital, and a very large number of followers, I have had ample opportunities of noting the prevailing diseases amongst the natives, besides having had considerable practice in the bazaar itself, and I can assert most positively that during the last 18 months—while I have been staff surgeon—I have not met with a single instance of enteric fever in a native. Notwithstanding, I myself do not consider that this fact weighs much against the many other facts which point to filth as a very powerful factor in the causation of Indian enteric. And surely it is quite possible that the native, born and brought up amongst filthy surroundings, may become tolerant to the miasms and microbes bred of filth, or, possibly, many of them may have had the disease in childhood without its having been recognized as "enteric."

I wish here to note a fact in connexion with the occurrence of enteric fever in Mhow, and it is this: that one district in the cantonment, and the same district each year, supplies the majority of admissions for this disease. Two-thirds of the total admissions during the last three years have come from this same district—the one occupied by the cavalry. Taking the admissions for the last three years, I find, for 1890, a total of 24 admissions, and of these 15 came from the cavalry district; in 1891 there were 25 cases out of a total of 38, and in 1892 13 cases out of a total of 22 from this same district. Notwithstanding frequent investigations, no definite cause can be discovered to account for this fact; the cavalry barracks are built on a very good site, are kept perfectly clean, and nothing whatever can be found wrong with the water or food supplies—which are the same as are supplied to all the other troops in Mhow—to account for the great prevalence of "enteric" amongst the men of this district. I think the only way we can account for it is, that the cavalry barracks are much nearer to the bazaar than any of the other barracks occupied by European troops, and the bazaar being therefore more accessible, it is more frequented by the men from this district, who partake of bad food and drink in the eating houses, of which there are many. The facts above noted support, I think, to some extent, the bazaar or filth origin of a great deal of the enteric fever in Mhow, and probably of a great deal in India generally.

As to the influence of climate in relation to Indian enteric fever. Here we have a special influence which does not exist in temperate climates, and several facts show that this influence is considerable, though it is probably only a secondary or predisposing influence. The following facts support this inference:—

1. We find the majority of cases occurring in the young and unacclimatised, amongst those recently arrived in the country.
2. There is often a distinct history of exposure (sun or chill).
3. The disease is comparatively rare amongst women, who are less exposed than the men to climatic influences.

I will now draw attention to some differences in the symptoms (which I have myself observed) of enteric fever of temperate climates, and of enteric fever as seen in India. In perusing some case books at this station, I find the following remark, made by a medical officer during the outbreak of enteric fever at Mhow in 1889. He states:—"In this epidemic very few of the patients have "any abdominal symptoms to speak of." I quote this remark as it quite agrees with my experience of the last three years.

Below will be seen a comparative table of symptoms, which will most readily show the chief points of difference, which I have observed, between Indian and European "enteric."

COMPARATIVE TABLE OF SYMPTOMS.

Indian Enteric Fever.	*European Enteric Fever.*
1. *Invasion.*—Sudden onset frequently noted; rarely a gradual indefinite onset with prodromal symptoms; very often a history of exposure.	1. *Invasion.*—Insidious, with general malaise lasting 10 to 14 days; a history of contaminated water or milk will often account for the attack.
2. *Temperature.*—There is hardly ever a typical chart; very often the highest temperature met with is at the very beginning (104° F. or higher). The temperature is sometimes intermittent for a few days, at the commencement of the attack: the regular daily rise, so characteristic of the fever in Europe, is often absent, and instead we have sometimes a fever of an almost continued type, during the first week or 10 days, with little or no morning remission.	2. *Temperature.*—Usually rises regularly from the beginning, and is 1 to 2° higher in the evening than the morning; it generally reaches 103° to 104° F. on the third or fourth day.
3. *Abdominal Symptoms.*—Most often absent, or very ill-defined. Often no tenderness over the right iliac fossa, and no gurgling where constipative).	3. *Abdominal Symptoms.*—Abdomen almost invariably tumid, with tenderness over the right iliac fossa, and gurgling.
4. *Diarrhœa.*—More often constipation present, necessitating the regular use of enemas, when present often semi-solid, and more like mustard than pea-soup, and not characteristic.	4. *Diarrhœa.*—Usual, with characteristic liquid pea-soupy stools.
5. *Eruption.*—Rose-coloured spots absent in a large proportion of cases.	5. *Eruption.*—Rose-coloured spots generally present.
6. *General Appearance.*—Face more often has a dusky look without a bright malar blush; eyes often suffused, and a general heavy look about the patient more like typhus.	6. *General Appearance.*—Face flushed; cheeks bright red, rarely dusky; eyes bright and observant.
7. *Pulse.*—In a large proportion of cases the temperature being high the pulse keeps below 100; often it is only 70 to 80 per minute.	7. *Pulse.*—As a rule 100 to 120 or more per minute.

The pathological differences, which I have noted, have been as follows:—In European "enteric fever" the large intestine is usually healthy, the ileocæcal valve forming a sharp line of demarcation between diseased and healthy structures, whereas, at the post-mortems of a great many cases which I have seen out here there has been inflammation and ulceration of the mucous membrane of the colon, extending as far as, and sometimes beyond, the sigmoid flexure. Occasionally the inflammation and ulceration has been confined to the large intestine, without there being any marked changes in Peyer's patches.

III.—On the Treatment of Enteric Fever in Mhow by Tartarated Antimony.

This treatment was commenced in Mhow, in May 1891, in consequence of a circular which came from the Administrative Medical Officer, Bombay Army expressing a wish that it should be given a trial; it had been tried by Surgeon-Major Williamson at Quetta, and he had reported most favourably on it.

I shall attach to this a tabular statement of all the cases of enteric fever, 43 in number, which have undergone the tartarated antimony treatment since May 1891. The majority of the cases were treated by myself, and those that were not came under my observation; as a result of this experience I have formed a very favourable opinion of this drug in "enteric."

During 1891 and the early part of 1892 a total number of 43 cases were treated with tartarated antimony; of these, 37 recovered and 6 died, giving a mortality of 13·95 per cent., which compares favourably with the last reliable statistics which I have at hand. In the last annual report of the Sanitary Commissioners with the Government of India, I find that the per-centage of deaths to cases in 1890, in the Bengal Presidency, was 23·25 per cent., in the Bombay Presidency 16·78, in the Madras Presidency 34·97, and for the whole army of India 23·79 per cent., while in Mhow, in 1890, the mortality was 24·00 per cent. The mortality under the tartarated antimony treatment, so far as it has been tried in Mhow, is, therefore, considerably less than is shown in any of these statistics.

The treatment with little variation has been carried out as follows:—Tartarated antimony, $\frac{1}{12}$th grain in water, was given to the patient every second hour, day and night when awake (patient not disturbed if sleeping). Diet: Milk, generally four pints in 24 hours, and $\frac{1}{3}$rd part of lime water was invariably added to the milk.

Stimulants were given in a great many cases, and considerable quantities were sometimes absolutely necessary, particularly in cases with lung complications, but only given when the heart's action and the pulse indicated failure of the circulation, and not in every case, and as a regular part of the treatment; in some cases when the temperature ran very high, antipyrin or phenacetin (the latter preferred) was given, but it was not the rule to give antipyretics. I must add that the antimony was continued until the temperature came down to normal, and remained so for three or four days. I have not found that the drug has ever caused nausea, diarrhœa, or depression; on the contrary, the patients seemed to become very tolerant of it, and in some cases in which diarrhœa was present it became less after beginning the antimony, which made me think that in some way the drug must have subdued the local inflammation in the intestines, as we know it undoubtedly has the power of doing in other inflammatory conditions. When the patients were put on this treatment early, the disease ran a very satisfactory course as a rule; there were, however, two or three exceptions:—In cases Nos. 26 and 27 in the table attached, which died five days after admission, I was convinced from the first, that no treatment would be of any avail; these men came into hospital almost collapsed, and apparently suffering from intense blood poisoning; they became unconscious and delirious almost immediately after admission, and steadily ran down, without any sign of a rally; they were only four to five days under the treatment; some of the cases which recovered had been very severe, with lung complications, and the antimony seemed to act very well in such cases, by promoting and softening secretion and assisting expectoration. The skin was kept nicely moist all through, and often a tongue which, at first, had been dry and brown, became soft and moist. I think the antimony treatment, so far as it has been tried in Mhow, has been very successful, and cases seemed to me to do better under this treatment than under any other I had previously tried.

It will be noticed in the table attached that some of the cases did not come under the tartarated antimony treatment, until 12 to 14 days after admission; they were thought not to be cases of enteric fever when first admitted to the Station Hospital, and were treated with diaphoretics and quinine, subsequently it became evident that they were really cases of enteric, and they were transferred to the Section Hospital (to obtain the advantages of better nursing); they were not treated with tartarated antimony until their arrival at the Section Hospital, 10, 12, or 14 days after their admission.

TABULAR STATEMENT of Cases of "Enteric Fever" treated by Tartarated Antimony.

Serial Number.	Rank and Name.	Day of Disease after Admission on which Treatment commenced.	Dose given.	Result.	Remarks.
1	Corporal R——, Middlesex Regiment	14th day	$\frac{1}{12}$th grain every 2 hours.	Recovered	A transfer from Station Hospital to Section Hospital. Not treated with antimony until arrival at Section Hospital.
2	Lance-Corporal E——, 18th Hussars	10th day	$\frac{1}{12}$th grain every 2 hours.	„	
3	Private H——, Middlesex Regiment	12th day	$\frac{1}{16}$th grain every 2 hours for 3 days, then $\frac{1}{12}$th grain every 2 hours.	Died	A transfer from Station Hospital on 12th day after admission. He had previously been treated with diaphoretics and quinine. A very severe case. He died on 17th day after admission, therefore had been on antimony treatment only 4 days.
4	Private D——, Middlesex Regiment	5th day	$\frac{1}{12}$th grain every 2 hours.	Recovered	
5	Sergeant S——, 18th Hussars	5th day	$\frac{1}{12}$th grain every 2 hours.	„	
6	Lieutenant G——, 18th Hussars	5th day	$\frac{1}{12}$th grain every 3rd hour.	„	
7	Sergeant T——, 18th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	„	A very severe case, complicated with broncho-pneumonia.
8	Private M——, 18th Hussars	9th day	$\frac{1}{12}$th grain every 2 hours.	„	Treated with diaphoretics and quinine for first few days.
9	Private D——, 18th Hussars	9th day	$\frac{1}{12}$th grain every 2 hours.	„	
10	Lance-Corporal E——, 18th Hussars	11th day	$\frac{1}{12}$th grain every 2 hours.	„	At first thought to be ague, and treated with quinine and diaphoretics.
11	Private G——, 18th Hussars	8th day	$\frac{1}{12}$th grain every 2 hours.	„	A very severe case; broncho-pneumonia at bases of both lungs.

Serial Number.	Rank and Name.	Day of Disease after Admission on which Treatment commenced.	Dose given.	Result.	Remarks.
12	Private S——, 18th Hussars	7th day	$\frac{1}{12}$th grain every 2 hours.	Recovered	
13	Private A——, 18th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	"	
14	Private P——, 18th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	"	
15	Private A——, 18th Hussars	3rd day	$\frac{1}{12}$th grain every 2 hours.	"	Severe case; delirious at first with dry brown tongue; under treatment steady improvement, and tongue became clean and moist.
16	Private J——, 18th Hussars	10th day	$\frac{1}{12}$th grain every 2 hours.	Died	Transfer from Station to Section Hospital. A very severe case; not put on antimony treatment until arrival at Section Hospital, and was only 6 days on the treatment before he died.
17	Private B——, 18th Hussars	3rd day	$\frac{1}{12}$th grain every 2 hours.	Recovered	
18	Corporal P——, 18th Hussars	Probably from 2nd or 3rd day; no record can be discovered until 16th day.	$\frac{1}{12}$th grain every 2 hours.	"	
19	Private W——, Middlesex Regiment	4th day	$\frac{1}{12}$th grain every 2 hours.	"	
20	Private R——, 18th Hussars	5th day	$\frac{1}{12}$th grain every 2 hours.	"	
21	Corporal P——, 18th Hussars	6th day	$\frac{1}{12}$th grain every 2 hours.	"	
22	Private W——, 18th Hussars	6th day	$\frac{1}{12}$th grain every 2 hours.	"	

Serial Number.	Rank and Name.	Day of Disease after Admission on which Treatment commenced.	Dose given.	Result.	Remarks.
23	Private N——, 18th Hussars	4th day	$\frac{1}{12}$th grain every 2 hours.	Recovered	
24	Private F——, 18th Hussars	3rd day	$\frac{1}{12}$th grain every 2 hours.	"	Very severe case; complicated with general bronchitis of both lungs.
25	Private D——, 18th Hussars	15th day	$\frac{1}{12}$th grain every 2 hours.	"	No record of treatment up to 15th day.
26	Sergeant W——, 18th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	Died	A very severe case; delirious and unconscious from the beginning. Steadily ran down, without any sign of a rally. Died on the 5th day after admission, therefore had been only 3 days under the treatment.
27	Private K——, 18th Hussars	3rd day	$\frac{1}{12}$th grain every 2 hours.	"	An exactly similar case to No. 26. Came in to hospital on the same day, and died 5 days after, without any sign of a rally; only 2 days under the treatment.
28	Private L——, 18th Hussars	15th day	$\frac{1}{12}$th grain every 2 hours.	"	Admitted as "ague," and as such treated with quinine and diaphoretics. Died on third day after antimony commenced. Broncho-pneumonia at bases of both lungs. Post-mortem showed that the disease had advanced very much before this treatment was commenced.
29	Sergeant M——, 18th Hussars	6th day	$\frac{1}{12}$th grain every 2 hours.	Recovered	A very severe case, complicated with broncho-pneumonia.
30	Lance-Corporal P——, 18th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	"	
31	Private D——, Middlesex Regiment	5th day	$\frac{1}{12}$th grain every 2 hours.	"	
32	Lance-Corporal H——, 7th Hussars	4th day	$\frac{1}{12}$th grain every 2 hours.	"	

Serial Number.	Rank and Name.	Day of Disease after Admission on which Treatment commenced.	Dose given.	Result.	Remarks.
33	Private E——, 7th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	Died	Very severe case; delirious from the beginning, with very high temperature; on 10th day hyperpyrexia, the temperature rushing up to 109° F., and died on that day.
34	Private B——, 7th Hussars	5th day	$\frac{1}{12}$th grain every 2 hours.	Recovered	
35	Private L——, 7th Hussars	13th day	$\frac{1}{12}$th grain every 2 hours.	„	Admitted at first as "ague," and as such treated with quinine and diaphoretics until 13th day.
36	Private H——, 7th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	„	
37	Private W——, 7th Hussars	2nd day	$\frac{1}{12}$th grain every 2 hours.	„	
38	Private P——, 7th Hussars	12th day	$\frac{1}{12}$th grain every 2 hours.	„	Treated with quinine and diaphoretics for first few days.
39	Private N——, 7th Hussars	4th day	$\frac{1}{12}$th grain every 2 hours.	„	
40	Private J——, 7th Hussars	6th day	$\frac{1}{12}$th grain every 2 hours.	„	
41	Gunner M——, Royal Artillery	9th day	$\frac{1}{12}$th grain every 2 hours.	„	A transfer from the Station Hospital. He was admitted as simple continued fever, and treated at first with quinine and diaphoretics.
42	Lieutenant M——, 20th Bombay Infantry.	6th day	$\frac{1}{12}$th grain every 2 hours.	„	A very severe case with a good deal of delirium.
43	Lieutenant P——, Middlesex Regiment.	3rd day	$\frac{1}{12}$th grain every 2 hours.	„	

APPENDIX No. VII.

CLINICAL LECTURE ON "THE INFLUENCE OF MYOPIA ON MILITARY SERVICE."

(*Delivered in the Army Medical School, December* 1893.)

By Surgeon-Captain H. R. Whitehead, F.R.C.S., Eng., Assistant Professor of Military Surgery, Army Medical School.

I know of few subjects which have a greater interest for military surgeons than the one we have to discuss to-day. It is not, however, only a question for military surgeons, but one of widespread national character. Many surgeons in civil life are called on to certify to the visual efficiency either of recruits for the army, or of bodies of men employed in other public services, such as railway employés, sailors on merchant ships, pilots, &c., and it is of the first importance to appreciate in our own minds the influence which the presence of myopia exerts in these occupations.

Year by year the importance of good shooting in the army is being urged upon us, and the adoption of the new rifle, sighted for extremely long ranges has made it most imperative that greater attention shall be paid to the sight of the men destined to use this weapon.

Not only in musketry is the soldier called on to exercise to the fullest extent his visual powers, but many other of his military duties, such as signalling, call for very high degree of acuteness of vision. There is also a peculiar faculty which is of paramount importance in military life, I allude to the alertness of vision. This latter function, so necessary for the soldier to possess, may be trained to a very high standard, and such training should be fully recognised as part of the ordinary education of the soldier.

The art of war has, like many other of the arts and sciences, undergone almost a complete revolution in our own times. It is not so very many years ago that the muzzle loader was the weapon with which all countries were armed; this, with its comparatively limited range compared with the new rifle (the Lee-Metford magazine rifle) is as different as a cart horse is from a thoroughbred racehorse.

The great improvement in the power and range of the weapon now used in warfare has done away with much of the personal equation of strength and bravery in the actual encounter, although these characteristics will always be most highly prized in soldiers. The Commander who now has his men sufficiently trained to move with great celerity, and to use to its full power the class of weapon with which all modern armies are now armed will inevitably stand the best chance of winning the day, other things being equal. The Government looks to you, gentlemen, to see that only suitable men are enlisted, and that their sight is of such a nature that it will not nullify the effects of a long and expensive training in musketry exercises. When we consider that the dial sight of the Lee-Metford rifle is capable of sighting up to 3,500 yards, we shall understand that in order to get the full value out of such a weapon, only those with first-class sight should be employed to use it.

We cannot, of course, in our army, fed by voluntary recruiting, pick and choose our men in the way the great continental countries, whose armies are kept up by conscription, can do, and employ those with the best sight in rifle regiments, and those with indifferent sight in departmental corps. No doubt this would be a very satisfactory way of proceeding. As our recruiting is perfectly voluntary, the supply often falls short of the demand, and we cannot therefore draw the line as tight as we should like to.

For an ideal army we should certainly demand nothing less than emmetropia from those destined to form the first lines of our fighting machine, we might, however, with safety, allow some slight measure of error in refraction in Departmental Corps.

Let us now consider in detail:—

1st. The test for eyesight applied to recruits for the army.

2nd. The amount of acuteness of vision this corresponds to.

3rd. The amount of myopia this allows.

4th. The character of the vision present in recruits who pass the test with a minimum of acuteness of vision due to myopia.

The regulations are, that recruits for the Cavalry, Artillery, and Line, shall be able to count the test dots (supplied by the State for the purpose) with each eye separately at a distance of 10 feet.

For Departmental Corps the distance is 5 feet.

For the Militia the same as Departmental Corps.

The present official test dot card was suggested by Sir Thomas Longmore, C.B., who was at that time Professor of Military Surgery in the Army Medical School. As an outcome of a correspondence between the Army Medical Department and the War Office, the military advisers of the Government in 1863 formulated the following requirement for recruits, viz.:—"That men " should not be received into the service who do not see well, to 600 yards at " least, a black centre of 3 feet in diameter on a white ground."

This corresponded to the bull's-eye of the target then in use at 600 to 900 yards.

It was obviously impossible to expose each recruit to the test as it thus stood, and Sir Thomas Longmore, acting on the principle of the equality of the visual angle, invented the test dot card. In which each circular dot at 10 feet is seen under the same visual angle as the 3-foot bull's-eye at 600 yards.

The calculation on which this is based is a simple rule of three sum.

As 600 yards is to 3 feet so is 10 feet to the answer,

$$600 \text{ yards} : 3 \text{ feet} :: 10 \text{ feet} : x.$$

the answer is $\frac{1}{5}$th of an inch. The dots, therefore, are made of this size, and are placed at a distance of 10 feet.

For each of these dots to be seen under an angle of one minute, or $\frac{1}{60}$ of a degree, which Snellen has taken as his standard for the normal acuteness of vision (the dots being non-complex bodies), they should be distinguished under the usual condition of illumination at a distance of 43 feet, and would at this distance, therefore, correspond to $\frac{6}{6}$ of Snellen's test types, or 1 of the normal acuteness of vision. As we have already stated, the regulations only demand that the dots should be held at a distance of 10 feet for the Cavalry, Artillery, and Line, and at 5 feet for Departmental Corps, and for the Militia. We thus allow recruits for the Line to enter the service who possess only one-fourth of the normal acuteness of vision, and for Departmental Corps and the Militia only one-eighth is considered necessary.

Compared with Snellen's test types, this would represent $\frac{6}{24}$ and $\frac{6}{48}$ respectively, which, as we must all admit, is an extremely low amount of visual acuteness to require.

We might, for a moment, digress here to state that the reason we do not simply use Snellen's test types to estimate the acuteness of vision, which would, in many ways, be preferable, is, that a certain number of recruits cannot read, and although the number is becoming less every year, yet we still have to encounter this difficulty. It would seem to be just as important to note accurately on his medical history sheet a recruit's vision on joining as to place on permanent record his chest measurement, weight, and height.

Failing the general use of Snellen's types, the test dots are a handy and easily applied test.

Luckily for our efficiency as a military power, very few of our soldiers possess only just the minimum of acuteness of vision; and, in addition, the sight of the class from which our recruits are mostly drawn is good. Let us now consider what amount of myopia can pass the test. Sir Thomas Longmore, who has done so much to render our knowledge on these points exact, and whose remarks in his Optical Manual are most worthy of our very close attention, found from a large number of observations that recruits with

1·75 D of myopia could just pass the dot test at 10 feet; with 2 D of myopia they failed to do so. We may take it, then, as a perfectly established fact, that men can enlist with 1·75 D of myopia.

What will be the character of the vision of a recruit with this degree of myopia? We well know that there is only one point at which, when the eye is at rest, he will see absolutely distinctly, and this spot will be his *punctum remotum* situated a little over 20 inches from his eye. Beyond this spot everything will be more or less blurred and indistinct. At 20 feet he will have great difficulty in counting books on a shelf, and the features of individuals at this distance will be indistinct. He may be able to recognise people at this distance, but it will be from peculiarities of gait or figure, not from distinctness of vision. At 50 yards he will be unable to count accurately the number composing a group of figures, or to describe their relative positions.

At a distance of from 700 to 800 yards it will be doubtful if he can recognise a horse and rider, especially if they are moving against a dark background, skirting a wood, for example.

Longmore says, supposing the average width of a man equipped for field service to be about 18 inches, he would in this direction subtend a visual angle of one minute at 1,710 yards. If the circumstances of ground, atmosphere, &c. were favourable, such a figure would be perceived by a soldier with normal acuteness of vision at this distance. If the acuteness of vision is only one-fourth under corresponding circumstances, the figure would only be discerned at a distance of 427 yards.

You therefore see that the powerful rifle with which we now arm our soldiers if used by a myope of 1·75 D is robbed of more than half its value.

The moral effect on the soldier of giving him a powerful weapon is no doubt very great, if he knows he can get the full value out of it, but it would be useless to send him into the field to fight unless his acuteness of vision enables him to get the best possible effects from the rifle he carries. A soldier with 1·75 D of myopia armed with the most perfect rifle ever invented, is hardly a more effective fighting machine than one with normal vision armed with the old "Brown Bess" musket.

We have kept pace with the continental powers in improving the soldier's rifle, the question must soon come up for consideration, whether or not the present vision test is sufficiently stringent to ensure his being able to use it.

Besides the consideration of the vision of a recruit with the limit of myopia in bright daylight, we have to consider the effects of alterations in the condition of illumination, and we shall find that herein lies one of the great dangers of allowing myopes of even this comparatively small degree to serve in our army. When the illumination is dull from any cause, or the atmosphere darkened by snow, rain, fog, smoke, &c., the sight of myopes becomes very greatly impaired, and the defectiveness of their vision seems to be, under these conditions, out of all proportion to the comparative slightness of the error of refraction. It is, however, at night or in twilight that the full effects of such an error of refraction becomes most apparent. At such times the pupil dilates widely and allows the marginal rays to penetrate into the eye, the result being that the diffusion rays about the image formed on the retina are greatly increased, and the image proportionately blurred. The blurring of the image is still more increased by spherical aberration which is present, to some extent, under deficient illumination of an object.

In bright sunlight the pupil contracts to a very small point, and the myope sees under his most favourable conditions in brilliant illumination; most of the marginal rays are then excluded, and the image on the retina is comparatively clearly defined.

In this connexion I may draw attention to the fraud which is occasionally practised on the recruiting medical officer. Men who are suffering from myopia to such an extent as to render them unfit for the service, have been advised to instil a drop of solution of eserine into the eye some little time before they are examined. In this way the pupil is made to contract, and the vision is temporarily much improved.

At night or on a dull day the possessor of a very small amount of myopia, is for all practical purposes, very nearly blind. Could we trust at an important outpost on service a soldier with 1·75 D of myopia? Or again as an engine driver who had to see and recognise signals rapidly and accurately on a dull or rainy night? or as a look-out on a ship at sea? Most assuredly not.

Many of our wars are against savage nations who move with marvellous celerity and stealth, and who often choose for their attack the time just before daybreak. Should we feel confident that a myope, of the amount under discussion, would be able to observe readily the approach of such foes? It is alike unfair to the individual and courting disaster to allow the safety of a body of men to depend on the imperfect eyesight of a man afflicted with this infirmity. The strength of a chain depends on its weakest link, and perhaps the safety of an army on the indifferent sight of one individual. Longmore relates the case of an officer in the Crimean war who refused to go on picquet duty on account of his myopic condition. He stated that he could not distinguish in the dusk of the evening a Russian soldier from an English soldier. He was brought before a military medical board, and although the amount of myopia from which he suffered might have appeared trifling to a civilian surgeon, yet viewed with the special knowledge of such disabilities which military surgeons possess, his objection was upheld and he was invalided home.

In the same campaign one or two cases certainly occurred of officers being taken prisoners by the enemy on account of their myopic condition preventing them from distinguishing their foes from their friends until too late to profit by the knowledge.

We thus see that an amount of myopia, which might at first sight seem trivial and of little practical importance, has a very considerable and serious influence on military efficiency.

Nor must we omit to consider the effect of tropical climates on myopia.

Clinically, we divide myopia into the simple and progressive varieties. Should the disease have any tendency to be of the latter class, the conditions under which the soldier is called upon to serve in India and elsewhere in the tropics will most certainly aggravate the complaint, especially if the disease has gone on until choroidal changes have taken place, and a posterior staphyloma has become established.

Incidentally the deterioration of health so often caused by malarial fevers, and by even residence for a prolonged period in a hot country, has a very harmful influence on the progress of this disease. It is unadvisable to subject a person with uncorrected myopia, even of a small degree, to the glare and strain of tropical countries. The following case of a man now in hospital at Netley is so instructive, and brings out so clearly some of the important points which I wish to bring to your notice, and to particularly emphasise, that I venture to bring the case before you to-day.

Lance-Corporal S. K., aged 21, with $1\frac{9}{12}$ years' service, states that he had fair sight before enlistment. At the age of 14 he got employment as a clerk in an auctioneer's office, and had to work long hours in a badly-lighted office. This, no doubt, had a good deal to do with the origin of his myopia. When he was nearly 18 years old he began to notice that his sight was not as good as it had been, and he thought that office work had "strained his eyes." As months went on, and his sight became worse, he determined to give up office work and enlist, which he finally did on April 18th, 1892.

He enlisted at a provincial town, as he had doubts as to his eyesight being sufficient to pass the test; he had previously gone up to the hospital and interviewed the sergeant, and had found that he was just able to pass the test when the dots were well illuminated. He selected a bright, sunny day for his medical examination; he experienced some difficulty in seeing the dots. He was. however, passed "fit." He went through his recruit's course of musketry in August 1892. At short ranges he saw the target fairly well, but could not see the bull's eye distinctly at further than 200 yards. Up to 600 yards he could see the target, and calculated the position of the bull's eye. At a further distance than 600 yards he could not see the target at all, but he could see the dummy targets for marking against the sky line, and by calculating whereabouts his target lay he got on some shots. In addition to this, when the officer in charge of the party was occupied at the other end of the line of butts, his sergeant, who was a good marksman, fired a good many rounds for him at the long ranges, and he just managed to become a third class shot.

On joining his regiment he found great difficulty when on sentry in recognising officers passing his post, especially in the evening.

In the twilight his sight was very defective, and he states that he never went out without a comrade, as he was afraid of not recognising and saluting his officers.

For the great part of his service he has, however, been employed as a clerk in the various regimental offices.

In March 1893 he was ordered out to Malta with a draft for his battalion stationed there. He was not particularly exposed to the glare of the sun, as a fortnight after landing at Malta he was taken into the orderly room as a clerk. He found, however, that the glare of the sun had a distinctly bad influence on his eyesight.

In September 1893 he had to fire his annual musketry course. At 200 yards he could now hardly see the bull's eye, except by partly closing his eyelids, and excluding the marginal rays. At 300 yards he could not discern the target. He found it was useless for him to attempt to fire his course, and he reported that he could not see, and was sent to hospital by his commanding officer. From thence he was invalided to Netley with myopia.

His present condition is as follows :—

Distant vision R.E. $\frac{6}{\text{Nil}}$ C—4 D $= \frac{6}{9}$

L.E. $\frac{6}{\text{Nil}}$ C—4 D $= \frac{6}{9}$

Near vision R.E. reads ·5 Sn at 10 inches.
L.E. reads ·5 Sn at 10 inches.

A posterior styphyloma is present in both eyes.

He thus evidently joined the service with just the limit of myopia, viz., 1·75 D, which increased in eighteen months to 4 D of myopia.

I think we have shown that uncorrected myopia of even a comparatively slight degree is very undesirable from a military point of view, and this leads up to the final consideration, namely, whether it is advisable to allow the soldier to use correcting lenses for this defect ? and by this means to be brought to a condition of emmetropia.*

At first blush the question would seem to admit of no discussion, and that the correction by lenses of any error of refraction which might exist would be a most eminently sensible arrangement.

There are, however, decided disadvantages in military life to the use of spectacles, and especially in our own army. We know that in many of the continental armies the use of spectacles is no bar to military service.

The officers in our own army are, moreover, tacitly allowed the use of spectacles, at least there is no regulation against it, and by a curious anomaly a soldier is allowed by our regulations to use spectacles on one occasion, namely, on the rifle range during his musketry course. Surely if their use were anywhere desirable it would be on the field of battle, and not merely to give him a temporary aid in times of peace.

The circumstances which militate against their more extended use in our army would seem to be as follows :—

In the first place, our soldiers are seldom called upon to operate in a civilised land, but usually in the interior of some wild and distant country, and at some distance from their base of operations, and transport even of the necessaries of life, and military existence is by no means easy; under these circumstances it would be difficult to replace spectacles if broken. Certainly a small supply of spectacles of lower powers might form part of the equipment of a field hospital; but we must remember that very often our troops are split up into such small bodies—as, for instance, during the campaign in Burmah—that it would be almost impossible to send with them any, except the most urgently needed stores and drugs. If, then, a soldier got his spectacles broken while on this detached duty they would be hard to replace, and the man would be almost useless.

---

* At Brussels in 1875, at a meeting of the Opthalmological Congress, there was a discussion on the use of spectacles in armies. The following conclusions were adopted :—

1. The interdiction of spectacles deprives an army of many intelligent men. The Congress is of opinion that there are good reasons for admitting the use of spectacles in armies.
2. Supposing spectacles to be worn, the meeting decided that the highest degree of myopia compatible with military service ought to be completely corrected, by a −5 D lens.
3. Supposing the use of correcting glasses not to be admitted, the highest degree of myopia compatible with military service ought to be under 3 D.

Again, in damp weather, the lenses of the spectacles get clouded by the deposition of the moisture from the atmosphere; in order to obtain clear definition the soldier would have constantly to take them off and wipe the glasses, a very unsatisfactory proceeding.

The use of spectacles would not add to the smart appearance of our troops, and would meet with some opposition on this score.

The whole question, however, seems to narrow itself down to this issue: that the State has now placed in the hands of our troops a very powerful weapon, with a very long range, and in order to get the full value out of this weapon the soldier must be practically emmetropic, or possess only such an error of refraction as may be fully corrected by lenses of the weaker powers.

It is obviously disadvantageous in many ways to allow the general use of spectacles. Can we then procure suitable recruits with emmetropia? If not, we are driven to allow men with some amount of myopia to enlist, and if we enlist such we should, in my opinion, in order that they may get the full power out of the Lee-Metford rifle, allow them to wear suitable lenses. The amount of myopia we should admit needs consideration.

It is not, however, for us to settle whether the test as it now stands is stringent enough, the regulations on the subject have been framed after careful consideration, and it is for us carry out carefully and strictly the regulations for our guidance. Many questions connected with the supply and demand, with which we may not be fully acquainted, have to be taken into consideration. It is our duty to make ourselves thoroughly acquainted with the amount of myopia the test allows of, the characters of the vision present in those who possess the limit of myopia, and the influence of this amount on the duties of the soldier.

APPENDIX No. VIII.

A CASE OF COMPLICATED FRACTURE OF LOWER JAW, WITH EXTENSIVE COMMINUTION FROM GUNSHOT WOUND—LEE-METFORD RIFLE.

By Surgeon-Captain M. O'HALLORAN, Army Medical Staff.

No. 4,246, Private J. McG——, 1st Battalion, Royal Inniskilling Fusiliers, age 30, and service 12 years, was brought to station hospital, Camp Lydd, on the 17th of last July, suffering from gunshot wound of face with fracture of body of left lower jaw, accompanied by comminution and separation of a large portion of alveolar process on same side.

He was accidentally shot that afternoon by a man of his regiment with a bullet discharged from Lee-Metford rifle, the muzzle of which was under 2 feet from patient's face when it was fired. The cartridge used was charged with black powder, which imparts an initial muzzle velocity to the bullet of 1,850 feet per second.

The bullet entered left side of face, about 1 inch below, and a little in front of a line drawn vertically from the angle of the mouth, passed through lower jaw below the crowns of left lateral incisor and canine teeth. It then took a backward direction through the floor of the mouth and emerged on the right side, about half an inch below lower border of right lower jaw and immediately anterior to the carotid sheath.

When I saw the patient, a few minutes after the accident, his condition was as follows:—There was considerable oozing of blood from both wounds and a free discharge of blood and saliva from the mouth, which was partly open. His pulse was accelerated, being 90 beats per minute, and was slightly weakened from loss of blood.

He never became unconscious, but could not swallow, or protrude the tongue from the injury to its muscles, and for the same reason articulation was seriously interfered with. There was a large effusion of blood into the tissues of sub-lingual region, and in a lesser quantity beneath the skin of anterior triangle of neck on right side, extending from wound of exit almost down to the right clavicle. Owing to the effusion in latter region the pulsation of right carotid artery was distinctly visible.

Entrance wound was irregular and somewhat circular, its greatest diameter being under half an inch. The surrounding skin was contused, swollen, and scorched for a short distance, and powder marks were numerous in this situation.

The body of left lower jaw was completely fractured in a vertical direction between lateral incisor and canine teeth; a portion of the alveolar process, carrying left canine and pre-molar teeth, was extensively comminuted and separated from adjoining body. These teeth, together with adherent portion of alveolus, were displaced in an upward and inward direction. The fractured alveolus was kept in this new position by the periosteum and soft parts. No spicula of bone protruded.

Exit wound was elliptical, and measured about half an inch in its long axis, which was parallel with lower border of right jaw. The edges of this wound were slightly jagged, showed no signs of eversion, and the size of the opening was not larger than wound of entrance.

The track of the bullet was narrow. It took an oblique direction, downwards, and slightly backwards. When the bleeding was controlled a probe could be passed through entrance wound to a depth of about 1 inch. In its passage through the hole in lower jaw, made by the bullet, some irregular edges of bone could be felt. The point of the probe was arrested on the inner side of the jaw by the muscles in the floor of the mouth. Through the exit wound the probe was passed over 3 inches obliquely forwards and upwards until it was also arrested by muscular tissue. No spicula of bone could be felt in this situation.

In the mouth the line of the teeth was interrupted on the left side as already described. The fractured ends of body of jaw were quite movable on each other and the left central and lateral incisor teeth were loose. Most of the bleeding from the mouth came from this situation as well as from the contiguous portions of cheek and body of jaw through which the bullet passed. The frænum linguæ was uninjured, as the bullet penetrated the muscles in the floor of the mouth beneath the tongue. The lingual artery escaped injury on each side, but, as far as I could make out, one, if not both, of the terminal branches (ranine and sub-lingual) must have been divided. Some of the extrinsic muscles of the tongue were severely injured, notably the genio-hyo-glossus, and for that reason he was unable to protrude this organ, which fell backwards on his assuming the dorsal decubitus and seriously interfered with respiration. Movements of the larynx were painful when he attempted to swallow and deglutition was almost impossible from the injury to the above-mentioned muscle as well as to the genio-hyoid muscle of right side. The posterior border of mylo-hyoid muscle of right side was probably slightly injured in addition to some of the anterior fibres of hyo-glossus of same side. The bullet passed through the sub-lingual gland of left side and as it emerged it penetrated through portions of right sub-lingual and sub-maxillary glands. Some small terminal branches of the inferior dental nerve of left side were injured, resulting in partial loss of sensation in left lower lip.

There were no signs of injury to the following structures, namely, Wharton's duct, hypoglossal, glosso-pharyngeal, or lingual nerves.

PROGRESS AND TREATMENT OF THE CASE.

Patient was placed in bed and wounds were washed antiseptically with a solution of liquor hydrarg. perchlor. (1 in 5,000) and compresses of lint steeped in this solution were applied to arrest bleeding. He was fed by nutrient enemata of beef tea and brandy, to which 15 minims tinct. opii were at first added, later the amount of tinct. opii was reduced to 5 minims for each enema. He was given ice to suck in small quantities. On the day after his admission the temperature rose to 101° in the evening and there was a fœtid, offensive odour from the mouth, from which saliva flowed freely, chiefly on account of his inability to swallow.

The salivary secretion was little, if at all, increased. He was unable to articulate above a whisper and began to complain of pains in the sub-maxillary and laryngeal regions. He did not sleep much, but retained his enemata. Bullet wounds showed signs of inflammation.

His mouth was syringed with warm diluted Condy's fluid and wounds were dressed antiseptically.

On the 19th July, two days after his admission, the discharge from the mouth was fœtid and contained small quantities of pus mixed with saliva. His temperature increased. Wound of entrance began to look unhealthy and the tissues injured, showed signs of inflammation, especially in the sub-lingual region where there was a brawny swelling.

After this date, the inflammatory symptoms increased rapidly and there was a discharge of pus from the wounds. The buccal discharge continued to be fœtid and contained large quantities of pus. It flowed freely from the mouth and saturated the dressings to the wounds, preventing them being kept in an aseptic condition. Owing to the extensive swelling in vicinity of fracture, the fractured alveolus could not be got into good position and still continued to project upwards and inwards into the mouth. On the 23rd July the crown of the left lateral incisor tooth came away. His temperature increased steadily up to the evening of that day, when it reached 103°. A purgative enema was administered as his bowels had not acted since admission. Nutrient enemata were discontinued. He was then fed by the mouth for the first time since the injury, as his powers of deglutition had improved.

24th July.—Temperature fell to 100°, bowels having acted freely after enema of previous evening. He had a good night's sleep and general condition was much improved, the fœtor from mouth having diminished considerably. The amount of discharge from wounds and mouth was unaltered in quantity.

26th July.—Two small spicula of bone came away through exit wound. The discharge from this opening was slightly increased. Entrance wound looked more healthy. It was dressed with pulv. iodoform and finally closed up on the 28th July. From this date his fever was not so marked, and his temperature was quite normal on the morning of the 29th July. His pulse, although soft, was full and regular and numbered 82 beats per minute. Fractured alveolus did not project so much into the cavity of the mouth and was easily retained in good position by a bandage carried around lower jaw and over the crown of the head. This bandage had to be removed frequently for the purpose of syringing out the mouth, the discharge from which was considerable. Each time the bandage was removed the displacement of alveolus recurred, and for that reason, as well as on account of the comminution of bone, I had grave doubts about its uniting with the body of the jaw. From the nature of the injury suturing the jaw was out of the question. Another small spiculum of bone was felt in the exit wound about 1½ inches from the surface. Although loose, it could not easily be removed. He took his nourishment freely, and his general strength was well maintained.

The same treatment was continued, and on the 7th August, the small spiculum above mentioned had worked its way to exit opening, where it was easily removed with a forceps. The exit wound was now healing rapidly from the bottom, and, although the discharge was slight, there was an irritable looking ulcer with profuse granulations in this situation, due, no doubt, to the irritation caused by passage of bone spicula. The second pre-molar tooth, which was quite loose, came away this morning, and the buccal discharge flowed freely from the cavity left by the falling out of this tooth. On the 11th August a small spiculum of alveolar process was lying quite loose in the mouth, and apparently came from the cavity above mentioned.

Nearly every day some small spicula of bone came away with the discharge from the mouth, and on the 25th August I removed the left central incisor tooth, which was quite loose and seemed to be a source of irritation. A large quantity of callus was being thrown out around ends of fractured body of jaw in spite of the suppuration from contiguous parts. The fractured ends were in good position, and were firmly united by the 1st of September.

The discharge from the mouth was now very slight. I accordingly wrote to Mr. Seville, L.D.S., practising at Folkestone, with a view to having some form of interdental splint made to keep the fractured alveolus in good position, and, if possible, to obtain firm bony union with body of jaw.

On the 4th September Mr. Seville saw the case with me and took a cast of the entire lower jaw, but did not consider that the alveolus could be got to unite. I was of the same opinion, and with Mr. Seville's assistance I removed the fractured portion, carrying the canine and first pre-molar teeth, the second pre-molar having already come away. This was easily effected. Mr. Seville steadied the teeth with a forceps, and with a few slight incisions of the gums close to the teeth on both sides of the alveolus, the edge of the knife being directed towards the fangs of the teeth, I was enabled to remove the fractured portion.

No anæsthetic was administered. There was considerable oozing of blood from incised gums, also a very offensive smell from situation of fracture.

Several small spicula of necrosed alveolus and body were felt by means of a probe, and these fragments, though loose, were not removed on account of troublesome bleeding.

A pad of lint, steeped in a solution of tinct. ferri. perchloridi, was applied to the bleeding surface, and the jaws were bandaged closely together. The hæmorrhage was perfectly arrested, and on the following morning when the dressing was removed, three large spicula of bone came away from the mouth. The discharge was now appreciably lessened, and the swelling in sub-maxillary region, which was of a brawny character, rapidly disappeared. The laryngeal pains also left him, but this latter symptom never gave much trouble.

Pulsation of the carotids became equalized, and the swelling of right anterior triangle of neck was no longer visible.

Condy's fluid was discontinued, and a solution of liq. hydrarg. perchlor. (1 in 5,000) substituted for syringing the mouth, the wound in which was dressed with pulv. iodoform.

On the 9th September I removed the fang of left lateral incisor, which was found to be giving rise to slight irritation.

Meanwhile, the union of body was quite firm, which obviated the necessity of an interdental splint being applied.

On the 21st September the exit wound was quite healed. The scars left by the wounds are of a healthy cicatricial nature, and barely noticeable. There is, practically, no deformity of the face, beyond a slight swelling over seat of fracture, due to the callus which has been thrown out, and which, in the course of time, may become almost imperceptible. All loose fragments of bone have now come away, and the gums have completely united over the previously exposed and denuded body of jaw. The loss of bone was considerable, and altogether nineteen (19) spicula have come away, three from wound of exit, and the remainder through the mouth. Owing to the loss of teeth and bone, his speech is very slightly interfered with.

It should be mentioned that, on removal, the left canine and 1st pre-molar teeth were quite movable on each other, and only two small portions of alveolar process adhered to them. This further shows, if proof were necessary, that the union of fractured alveolar process with body of jaw was well nigh impossible.

He has been on chicken diet for the past week, and can masticate quite comfortably. Sensibility has almost entirely returned to left lower lip, and he will be fit to return to duty in a short space of time. The result is highly satisfactory and instructive, as the case presents several very interesting points which are well worthy of note in connexion with bullet wounds inflicted with the new magazine rifle, and may be briefly considered under separate headings, as follows:—

1. The close range (under 2 feet).
2. The initial or muzzle velocity of the bullet, which was 1,850 feet per second, as black powder was used; this being considerably less than velocity with new powder (cordite), which is 2,000 feet per second.
3. The clean and comparatively healthy track made by the bullet, which was afterwards found embedded in the sand about 12 yards from where the man was standing when he fired his rifle.

   The bullet penetrated the soil in an oblique direction a distance of about 8 inches from the surface. The apex of bullet was slightly depressed, and the casing or envelope was fissured into two unequal parts, the line of fissure extending from the base on either side, parallel with the long axis of the bullet to about half its length. It would be interesting to know to what extent the casing might have been injured had the bullet passed through or struck one of the larger bones.
4. The character of the wounds, which were small, and almost equal in size, wound of exit showing no tendency to eversion.
5. The extensive comminution, and, as a result, necrosis of bone, accompanied by profuse suppuration.
6. The perfect union and satisfactory termination of the case.

APPENDIX

Annual Abstract of Meteorological Observations taken

NETLEY. Lat. 50° 51′ N.

Month.	Mean daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative Humidity.		
				Means of		Abs. Min.		Abs. Max.			Per Cent.	Minimum.	
			Mean, 9 a.m.	Min.	Max.	Temp.	Day.	Temp.	Day.		Mean.	Per Cent.	Day.
January -	34·8	30·080	33·4	26·2	43·5	13·5	19th	53·5	30th	·181	81	68	19th
February -	40·2	30·343	36·8	28·5	52·0	23·0	25th	58·8	16th	·225	84	61	18th
March -	40·4	29·746	41·6	31·7	48·9	20·3	12th	59·0	5th	·225	80	59	26th
April -	45·4	29·857	47·8	34·3	56·5	23·5	1st	69·0	28th	·265	73	45	23rd
May -	52·8	29·639	53·9	40·8	64·7	29·8	17th	83·0	12th	·329	72	38	13th
June -	62·2	29·906	63·3	49·1	75·4	32·1	10th	86·0	19th	·444	68	36	19th
July -	62·3	29·850	63·8	51·2	73·4	45·0	28th	82·5	26th	·484	77	54	16th
August -	61·2	29·735	61·5	51·4	71·0	40·0	30th	77·5	12th	·441	74	52	15th
September	59·2	29·913	61·3	49·0	69·5	40·3	16th	80·0	11, 12th	·469	79	52	11th
October -	52·2	29·664	53·8	43·3	61·2	29·8	31st	71·0	9th	·377	84	62	28th
November	43·1	29·745	43·5	35·2	51·0	24·8	25th	60·0	2nd	·279	89	63	2nd
December -	42·8	29·897	42·0	34·2	51·4	17·0	24th	68·0	2nd	·261	89	49	22nd
Year -	49·7	29·865	50·2	39·5	59·8	13·5	19th Jan.	86·0	19th June	·332	79	36	19th June

GIBRALTAR. Lat. 36° 6′ 20″ N.

January -	50·7	29·901	48·2	44·2	57·3	33·0	8th	65·2	25th	·275	74	50	18th
February -	55·0	29·935	53·4	50·1	59·9	44·2	14th	69·4	11th	·314	74	63	16th
March -	56·2	29·752	55·4	51·4	61·1	45·6	15th	70·8	9th	·338	72	43	9th
April -	61·5	29·741	61·6	55·3	67·7	48·2	8th	75·0	7th	·393	66	48	11th
May -	64·1	29·928	64·1	58·0	70·3	53·8	10th	73·0	16th	·414	67	53	27th
June -	69·0	29·950	69·1	62·2	75·8	55·0	1st	86·0	27th	·473	61	49	27th
July -	74·2	29·961	74·0	67·8	80·7	64·2	13th	85·4	27th	·524	65	51	3rd
August -	74·0	29·999	73·0	68·0	80·0	64·2	24th	90·4	16th	·541	62	52	17th
September	71·6	30·027	71·1	67·4	75·9	62·4	6th	81·6	5th	·556	70	48	7th
October -	67·0	29·883	65·5	61·6	72·4	53·4	27th	80·8	2nd	·490	73	64	13th
November	60·2	29·917	59·0	56·0	64·5	50·0	27th	70·4	9th	·409	79	60	17th
December -	57·7	30·208	54·7	52·0	63·5	46·0	30th	69·8	31st	·366	77	59	28th
Year -	63·4	29·939	62·4	57·8	69·0	33·0	8th Jan.	90·4	16th Aug.	·424	70	43	9th Mar.

MALTA. Lat. 35° 53′ 49″ N.

January -	52·0	29·912	51·9	48·4	55·5	40·6	21st	62·2	8th	·287	72	50	24th
February -	51·0	30·065	51·4	47·2	54·9	38·2	20th	59·4	11th	·278	71	51	19th
March -	57·6	29·916	57·9	52·5	62·7	44·6	4th	68·0	13, 14th	·346	71	57	31st
April -	61·5	29·820	60·6	56·1	66·9	52·4	18th	70·2	28, 29, 30	·431	82	75	2nd
May -	64·5	29·798	64·2	59·4	69·5	54·8	20th	73·4	26th	·524	85	70	21st
June -	72·7	30·241	73·3	67·4	78·0	62·6	2nd	86·8	27th	·716	87	76	8th
July -	78·8	29·890	79·8	73·3	84·4	68·4	18th	89·2	3rd	·814	80	64	24th
August -	79·7	29·939	81·2	74·2	85·2	71·0	12th	94·0	6th	·806	75	46	6th
September	77·7	30·013	78·6	73·3	82·1	68·0	26, 29th	92·2	8th	·692	71	55	25th
October -	71·7	29·828	73·8	67·1	76·2	59·2	14th	84·2	6th	·596	71	59	1, 11th
November	65·6	29·944	66·1	61·3	69·9	53·4	2nd	74·2	18th	·501	77	53	29th
December -	61·5	30·083	58·8	51·1	67·8	45·0	20th	73·4	1, 2, 3, 5, 6, 7	·384	76	52	2nd
Year -	66·2	29·954	66·5	60·9	71·1	38·2	20th Feb.	94·0	6th Aug.	·531	76	46	6th Aug.

No. IX.

at Netley and Foreign Stations in the Year 1891.

Long. 1° 20′ W. Height of Barometer Cistern above Sea, 47 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather. Number of Days of								Wind. Means of Observations under each Point per Month.								
	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
6·6	2·68	0·62	29th	14	1	—	—	2	—	11	2	7·0	5·0	0·5	1·5	1·0	9·0	2·0	5·0	—
6·0	0·04	0·02	3,11th	2	—	—	—	6	5	12	—	2·0	5·5	2·0	3·5	1·5	3·0	2·5	4·5	3·5
7·7	3·07	0·76	7th	19	8	1	—	—	—	14	—	5·0	5·5	—	1·5	1·5	7·0	4·0	6·0	0·5
7·3	1·08	0·56	4th	11	—	—	—	—	—	13	—	2·5	9·5	1·5	5·5	1·0	3·5	1·5	5·0	—
6·1	2·47	0·43	17th	18	—	—	—	—	2	9	—	3·5	3·5	—	3·5	1·0	12·5	2·5	4·5	—
5·7	1·70	0·41	22nd	10	—	—	—	—	4	11	—	0·5	7·5	1·5	3·5	0·5	11·5	1·0	3·5	0·5
6·9	2·56	0·75	26th	19	—	—	1	—	2	13	—	1·0	3·0	0·5	1·5	—	14·0	2·0	9·0	—
7·5	5·41	1·57	21st	23	—	—	1	—	—	13	—	1·0	—	—	1·0	1·0	19·5	3·5	5·0	—
6·8	1·68	0·26	30th	16	—	1	1	—	4	14	1	0·5	0·5	1·0	4·0	1·5	17·0	1·5	2·0	2·0
6·0	9·06	1·52	21st	21	—	1	—	—	4	11	2	1·0	7·5	0·5	1·5	5·0	14·0	1·0	0·5	—
7·5	4·19	1·03	10th	17	—	—	—	3	1	17	1	1·5	8·5	—	3·0	2·0	9·0	1·5	3·0	1·5
6·7	4·62	1·12	1st	21	—	1	—	1	3	15	5	1·0	3·5	1·5	2·5	2·5	15·5	3·0	1·0	0·5
6·7	38·56	1·57	21st Aug.	191	9	4	3	12	25	153	11	26·5	59·5	9·0	32·5	18·5	135·5	26·0	49·0	8·5

Long. 5° 20′ 53″ W. Height of Barometer Cistern above Sea, 53 feet.

Mean Amount of Cloudiness.	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
4·0	4·75	1·41	6th	8	—	2	—	—	11	6	—	1·0	2·5	8·5	—	—	—	5·5	13·5	—
6·0	0·98	0·41	10th	5	—	—	—	—	7	11	—	—	3·5	23·0	—	—	—	1·0	0·5	—
6·0	9·90	2·00	18th	14	—	—	—	—	7	12	—	—	0·5	13·0	—	—	1·0	16·0	0·5	—
4·5	0·50	0·27	26th	6	—	—	—	—	14	8	—	—	0·5	6·5	—	—	0·5	21·5	1·0	—
3·5	0·77	0·34	22nd	5	—	—	—	—	18	5	—	—	—	5·0	—	—	1·5	23·0	1·5	—
3·5	0·11	0·8	6th	2	—	—	—	—	23	4	—	—	—	15·0	—	—	—	13·0	2·0	—
3·7	—	—	—	—	—	—	1	—	21	3	—	—	1·0	10·0	1·0	—	1·0	18·0	—	—
2·5	—	—	—	—	—	—	—	—	23	4	—	—	2·0	17·0	—	—	0·5	11·0	0·5	—
5·0	1·72	1·69	10th	5	—	—	3	—	9	6	—	—	—	19·0	—	—	0·5	10·5	—	—
5·5	9·72	5·45	31st	9	—	—	3	—	11	10	—	—	—	12·5	—	—	2·5	15·5	0·5	—
7·1	11·83	3·20	8th	23	—	—	2	—	11	18	—	—	0·5	12·0	0·5	—	5·0	9·5	2·5	—
4·5	3·69	1·15	22nd	6	—	—	—	—	14	10	—	0·5	1·0	10·0	2·0	—	0·5	7·5	8·5	1·0
4·7	43·97	5·45	31st Oct.	83	—	2	9	—	162	97	—	1·5	11·5	151·5	3·5	—	13·0	152·0	31·0	1·0

Long. 14° 30′ 54″ E. Height of Barometer Cistern above Sea, 70 feet.

Mean Amount of Cloudiness.	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
6·5	4·58	1·12	13th	18	—	6	1	—	3	7	—	1·5	4·5	1·5	1·0	0·5	3·5	5·0	4·0	9·5
4·9	4·72	1·46	7th	17	—	1	—	—	10	6	—	2·5	5·0	0·5	—	1·0	0·5	1·0	3·5	14·0
3·3	0·11	0·04	1st	4	—	—	—	—	12	1	—	1·5	4·5	0·5	4·0	0·5	1·0	1·0	1·0	17·0
4·1	0·55	0·26	24th	8	—	—	1	—	9	4	—	1·5	1·5	1·5	0·5	1·0	—	3·0	5·0	16·0
3·5	0·14	0·04	7, 8th	5	—	—	1	—	10	2	—	0·5	2·0	0·5	1·5	—	1·5	2·0	3·5	19·5
1·6	0·01	0·01	18th	1	—	—	—	—	17	—	—	—	—	0·5	2·5	—	—	—	1·0	26·0
0·3	—	—	—	—	—	—	—	—	29	—	—	0·5	—	—	1·0	—	—	—	2·5	27·0
0·5	—	—	—	—	—	—	—	—	26	—	—	—	—	—	1·0	—	—	—	0·5	29·5
1·1	0·52	0·48	19th	2	—	—	—	—	24	—	—	—	4·5	1·5	—	—	—	0·5	4·0	19·5
3·4	2·96	0·59	20th	11	—	—	—	—	11	1	—	—	3·5	1·5	3·0	1·0	1·5	2·0	3·5	15·0
4·5	1·46	0·56	9th	7	—	—	—	—	6	5	—	0·5	1·5	—	3·0	—	2·0	1·0	1·0	21·0
5·0	3·09	1·33	5th	13	—	2	—	—	1	8	—	—	3·0	1·0	0·5	—	—	2·0	4·5	20·0
3·2	18·14	1·46	7th Feb.	86	—	9	3	—	158	34	—	8·5	30·0	9·0	18·0	4·0	10·0	17·5	34·0	234·0

Appendix

Annual Abstract of Meteorological Observations taken

SCUTARI CEMETERY. Lat. 41° 0′ N.

Month.	Mean Daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.			Per Cent.	Minimum.	
				Min.	Max.	Temp.	Day.	Temp.	Day.		Mean.	Per Cent.	Day.
January	40·0	29·938	39·3	34·6	45·4	27·2	26, 29, 30	58·4	19th	·204	80	59	19th
February	37·4	30·150	36·1	32·7	42·1	28·6	5th	50·4	12th	·177	79	62	25th
March	48·9	29·982	47·9	38·9	58·9	25·8	2nd	76·4	23rd	·260	70	38	23rd
April	54·2	29·822	53·5	44·8	63·5	34·6	6th	79·4	11th	·304	68	41	11th
May	62·7	29·846	62·5	51·5	73·9	41·2	15th	84·4	31st	·403	64	43	16th
June	73·0	29·840	73·1	61·3	84·7	50·0	16th	95·2	26th	·548	62	39	11th
July	77·3	29·771	78·0	65·0	89·6	59·4	21st	97·6	12th	·585	54	31	20th
August	78·4	29·813	79·0	66·1	90·7	61·0	29th	99·6	19th	·595	54	33	16th
September	70·2	29·934	70·5	60·0	80·4	50·0	30th	88·4	3rd, 8th	·491	62	38	19th
October	61·1	29·928	60·4	52·6	69·6	46·0	21st	76·8	4th	·415	74	45	28th
November	52·7	29·999	51·6	46·3	59·1	36·4	10th	68·2	29th	·316	78	60	10th
December	43·8	30·209	43·1	38·6	49·0	28·6	23rd	60·4	2nd	·240	82	58	15th
Year	58·3	29·939	57·9	49·4	67·2	25·8	2nd March	99·6	19th Aug.	·379	69	31	20th July

POLYMEDIA, CYPRUS. Lat. 34° 40′ N.

January	52·1	29·524	53·7	41·6	62·7	32·2	29th	69·3	10th	·305	68	48	29th
February	50·8	29·514	53·1	40·1	61·5	30·0	23rd	66·7	10th	·279	64	38	28th
March	59·6	29·533	61·8	49·2	70·0	37·0	1st	83·6	26, 27th	·370	63	40	18th
April	66·3	29·297	69·9	54·4	78·2	44·0	18th	92·6	30th	·387	50	26	26th
May	73·8	29·329	77·1	60·7	86·9	53·8	15th	99·0	20th	·462	48	25	2nd
June													
July													
August	†												
September													
October*†	74·8	29·485	78·8	61·7	88·0	58·8	29th	96·4	24th	·479	47	29	23rd
November	65·5	29·594	67·1	53·4	77·6	43·0	19th	91·8	3rd	·405	58	35	4th
December	57·7	29·587	57·2	48·4	67·0	37·2	26th	79·7	5th	·331	66	41	24th
Year	—	—	—	—	—	—	—	—	—	—	—	—	—

* 19 days (13th to 31st October). † From 1st June to 30th September,

TROODOS, CYPRUS. Lat. 34° 55′ N.

January		†											
February													
March													
April													
May													
June*	67·6	24·390	68·6	55·0	80·3	44·0	17th	90·0	28th	·298	38	23	23rd
July	68·1	24·300	68·6	57·7	78·5	51·8	1st	84·6	25th	·319	43	23	25th
August	69·1	24·330	70·8	58·0	80·2	49·2	29th	89·8	7th	·318	40	26	15th
September	61·2	24·360	62·2	51·0	71·3	42·0	28, 29th	80·3	5th	·286	48	25	23rd
October													
November													
December													
Year	—	—	—	—	—	—	—	—	—	—	—	—	—

* 20 days (11th to 30th June). † Aneroid.

No. IX.—*continued.*

at Netley and Foreign Stations in the year 1891.

Long. 29° 3′ E. Height of Barometer Cistern above Sea, 60 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.								
				Number of Days of								Means of Observations under each Point per Month.								
	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
7·6	4·32	0·92	23rd	22	11	—	—	2	2	17	—	7·5	5·5	4·5	3·5	5·0	1·5	—	—	3·5
8·5	3·03	0·46	18th	18	17	—	—	—	—	19	—	8·0	12·0	7·0	—	—	1·0	—	—	—
4·7	0·78	0·40	29th	5	2	—	—	3	11	5	—	6·5	2·5	—	0·5	7·5	3·0	—	—	11·0
7·5	1·47	0·84	14th	14	—	—	—	—	1	13	—	4·5	6·5	1·0	1·0	8·5	1·0	1·5	1·5	4·5
4·0	0·46	0·27	18th	4	—	—	3	1	7	3	—	5·5	8·5	3·0	—	6·5	3·0	—	—	4·5
3·4	0·92	0·48	4th	5	—	—	5	1	11	2	—	3·5	8·5	3·5	—	3·5	5·0	0·5	—	5·5
2·8	2·68	1·90	15th	8	—	—	7	—	15	—	—	7·0	11·5	4·0	—	4·0	3·5	—	—	1·0
2·9	5·82	4·03	29th	7	—	—	2	1	15	2	—	3·5	16·5	5·0	0·5	1·0	3·0	1·0	0·5	—
4·2	1·47	0·52	26th	8	—	—	3	—	8	3	—	5·0	11·0	5·5	—	1·0	4·0	—	—	3·5
5·2	2·67	1·17	29th	8	—	—	2	2	5	8	1	2·5	11·5	3·0	—	1·5	4·0	0·5	1·0	7·0
6·9	4·20	0·90	17th	17	—	—	2	—	—	10	—	3·5	6·5	1·5	0·5	6·5	6·5	2·0	0·5	2·5
7·6	5·96	1·95	18th	19	5	1	—	—	2	17	1	5·5	11·5	5·0	0·5	1·5	2·5	2·5	1·5	0·5
5·4	33·78	4·03	29th Aug.	135	35	1	24	10	77	99	2	62·5	112·0	43·0	6·5	46·5	38·0	8·0	5·0	43·5

Long. 32° 2′ E. Height of Barometer Cistern above Sea, 460 feet.

4·5	3·09	1·03	21st	12	—	1	4	—	3	6	—	4·0	4·5	5·0	1·0	—	1·5	3·0	3·0	9·0
5·0	3·85	1·16	19th	14	1	3	2	—	2	3	—	4·5	4·0	1·0	1·5	1·0	2·5	4·0	3·5	6·0
4·5	2·01	0·56	11th	8	—	—	—	—	4	2	—	2·0	1·5	5·0	2·0	1·0	2·5	3·0	0·5	13·5
4·4	0·18	0·09	18th	5	—	1	1	—	8	4	—	0·5	—	0·5	3·0	0·5	—	9·0	1·0	15·5
5·0	0·46	0·23	23rd	5	—	—	2	—	5	5	—	0·5	1·0	1·5	2·0	1·5	2·5	4·5	—	17·5
2·0	0·47	0·24	25th	3	—	—	—	—	12	—	1	—	—	—	1·5	—	7·5	0·5	1·5	8·0
3·5	1·21	0·98	11th	3	—	—	1	—	11	4	—	2·5	—	—	0·5	—	0·5	—	5·5	21·0
5·0	5·18	1·52	30th	11	—	—	—	—	6	4	—	1·0	2·5	—	2·0	0·5	2·5	2·0	1·0	19·5
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

taken at Troodos. (No return rendered for 1st to 12th October).

Long. 32° 53′ E. Height of Barometer Cistern above Sea, 5,720 feet.

1·5	—	—	—	—	—	—	—	—	12	—	—	0·5	0·5	—	2·5	1·5	1·5	0·5	1·5	11·5
1·5	2·18	1·30	20th	4	—	1	2	—	17	—	5	4·5	—	—	2·0	5·5	5·5	4·5	4·5	4·5
1·7	0·37	0·18	11th	3	—	1	—	—	21	1	2	5·0	—	—	0·5	5·5	3·0	1·5	6·0	9·5
2·8	0·63	0·47	15th	3	—	2	1	—	13	—	—	2·0	1·5	—	1·5	1·5	3·0	1·0	—	19·5
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Appendix

Annual Abstract of Meteorological Observations taken

FORT NAPIER, NATAL.

Lat. 29° 3′ S.

Month.	Mean Daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.			Per Cent.	Min.	
				Min.	Max.	Temp.	Day.	Temp.	Day.		Mean.	Per Cent.	Day.
January -	71·9	27·613	74·4	61·9	82·0	56·0	15th	95·0	20th	·471	53	26	19th
February -	72·9	27·568	74·6	61·9	84·0	55·0	28th	100·0	13th	·485	54	30	12, 13
March -	70·1	27·692	70·9	59·0	81·2	55·0	6th	95·0	6th	·474	58	28	25th
April -	68·2	27·727	70·1	56·2	80·3	49·0	7, 20th	92·0	16th	·483	60	32	25th
May -	63·5	27·690	65·4	50·3	76·8	38·5	31st	89·8	4th	·414	60	27	13th
June -	59·3	27·712	58·8	45·8	72·8	36·5	19, 20th	86·2	13th	·345	58	28	14th
July -	59·4	27·888	59·1	45·3	73·5	37·5	10th	83·4	29th	·329	55	30	22nd
August -	58·6	27·792	59·1	45·5	71·6	34·5	15th	87·5	7th	·327	56	31	5th
September*	64·9	27·694	66·0	50·1	79·6	39·8	24th	97·6	19th	·413	58	27	13, 19
October -	65·1	27·715	66·7	53·7	76·6	43·8	17th	101·4	22nd	·459	65	29	22nd
November	70·4	27·651	72·5	59·1	81·7	50·0	9th	98·5	11th	·526	63	24	11th
December	68·5	27·583	69·6	57·5	79·6	46·8	23rd	101·2	26th	·512	68	31	25th
Year -	66·1	27·694	67·3	53·9	78·3	34·5	15th Aug.	101·4	22nd Oct.	·437	59	24	11th Nov.

* 23 days (3rd to 9th September not recorded).

SIERRA LEONE

Lat. 8° 29′ 30″ N.

January -	82·5	29·674	79·9	76·2	88·7	70·6	7, 13th	90·6	26, 31st	·812	78	51	5th
February -	82·8	29·675	80·2	79·1	86·6	70·9	27th	90·7	4th	·771	74	56	27th
March -	88·4	29·670	85·0	82·3	94·3	61·0	31st	100·0	24th	·917	76	55	30th
April -	81·1	29·665	84·5	69·3	92·9	60·0	19th	96·0	2, 10th	·819	66	55	30th
May -	80·2	29·699	82·3	68·5	91·9	61·0	11th	95·0	24th	·902	79	64	1st
June -	80·3	29·692	81·5	70·2	90·5	65·0	27th	94·0	15th	·857	80	71	30th
July -	79·0	29·721	78·4	70·6	87·5	62·0	31st	91·2	3rd	·866	87	58	26th
August -	78·4	29·699	77·6	69·9	86·9	60·0	2nd, 4th	90·1	16th	·810	85	59	14th
September	79·3	29·636	79·3	71·5	87·1	67·4	26th	94·0	14th	·853	84	64	10th
October -	81·5	29·635	81·3	71·4	91·6	68·9	31st	98·4	30th	·862	79	61	5th
November	82·5	29·645	81·2	71·6	93·4	66·2	3rd	98·9	1st	·878	79	58	9th
December	81·6	29·640	82·2	71·5	91·7	62·4	8th	93·7	22nd	·877	74	61	31st
Year -	81·5	29·671	81·1	72·7	90·3	60·0	19th Apr 2, 4 Aug.	100·0	24th Mar.	·852	78	51	5th Jan.

BARBADOS.

Lat. 13° 7′ 39″ N.

January -	74·8	30·036	78·6	67·0	82·6	61·8	25th	86·6	4th	·649	63	45	6th
February -	74·0	30·065	79·1	66·4	81·6	60·5	2nd	84·0	26th	·596	58	37	19th
March -	74·7	30·032	80·3	66·3	83·2	59·5	23rd	87·0	26th	·631	58	38	15th
April -	78·2	30·036	82·7	70·4	86·0	67·4	7th	89·2	26th	·721	62	45	11th
May -	79·2	30·035	84·1	71·6	86·9	69·0	3rd	88·6	1st	·713	59	50	2nd
June -	79·6	30·034	82·9	71·3	88·0	67·8	20th	90·2	1st	·783	69	52	15th
July -	79·2	30·018	83·2	70·7	87·7	67·5	19th	89·0	13, 23rd	·891	68	56	23rd
August -	80·9	30·012	84·0	73·3	88·5	68·0	26th	90·8	30th	·803	66	44	22nd
September	80·3	30·003	85·7	70·3	90·3	68·0	12th	93·6	29th	·814	64	48	27th
October -	79·3	29·910	84·0	70·1	88·5	66·8	7th	91·8	5th	·834	70	57	2nd
November	77·9	29·952	82·1	68·9	87·0	64·5	27th	89·2	21st	·820	74	59	26th
December	75·9	29·979	80·2	66·4	85·4	60·0	25th	87·2	1st	·761	71	55	9th
Year -	77·8	30·017	82·2	69·2	86·2	59·5	23rd Mar.	93·6	29th Sept.	·747	65	37	19th Feb.

No. IX—*continued.*

at Netley and Foreign Stations in the Year 1891.

Long. 30° 2′ E. Height of Barometer Cistern above Sea, 2,220 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.								
				Number of Days of								Means of Observations under each Point per Month.								
	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
5·5	5·01	0·66	31st	20	—	—	5	—	4	7	—	3·0	3·5	7·5	3·5	5·5	1·5	1·0	1·0	4·5
5·0	2·89	0·67	13th	12	—	1	2	—	6	5	—	2·5	5·0	6·5	2·5	3·0	1·0	1·5	2·0	4·0
4·5	9·87	3·50	15th	20	—	2	6	—	8	6	—	1·5	4·0	4·5	3·0	5·0	1·5	1·5	2·0	8·0
3·5	0·82	0·35	16th	7	—	—	5	—	14	4	—	1·0	3·0	6·5	2·5	2·0	0·5	0·5	—	14·0
3·4	2·42	1·93	15th	7	—	1	3	—	12	1	—	1·0	0·5	3·5	1·0	2·5	0·5	—	2·5	19·5
4·2	1·90	1·79	27th	5	—	—	—	—	9	5	—	3·5	—	6·0	0·5	3·5	0·5	1·0	1·0	14·0
1·8	1·15	0·71	17th	3	—	—	—	—	24	3	—	2·5	0·5	4·5	2·0	2·0	—	—	0·5	19·0
4·0	1·19	0·54	26th	8	—	—	—	—	13	7	—	1·5	0·5	10·0	0·5	3·5	—	1·5	—	13·5
5·1	0·98	0·55	22nd	7	—	—	2	—	6	5	1	1·5	1·0	8·5	1·0	2·5	0·5	1·0	0·5	6·5
5·7	2·89	1·06	10th	15	—	—	8	—	3	10	—	0·5	1·5	10·0	2·0	5·0	—	0·5	0·5	11·0
6·7	7·41	1·75	30th	21	—	—	10	—	3	15	—	0·5	1·0	9·5	2·5	1·5	—	0·5	0·5	14·0
7·3	9·83	2·14	20th	22	—	2	12	—	2	14	—	—	2·5	9·0	3·0	3·5	—	0·5	1·0	11·5
4·7	46·36	3·50	15th Mar.	147	—	6	53	—	104	82	1	19·0	23·0	86·0	24·0	39·5	6·0	9·5	11·5	139·5

Long. 13° 9′ 17″ W. Height of Barometer Cistern above Sea, 224 feet.

Mean Amount of Cloudiness.	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
1·3	—	—	—	—	—	—	1	—	23	—	—	4·5	—	1·0	5·5	5·5	2·0	8·0	—	4·5
1·7	1·14	1·14	18th	1	—	—	1	—	19	—	—	3·0	1·0	1·0	2·5	4·0	4·5	4·5	2·0	5·5
1·8	—	—	—	—	—	—	—	—	15	—	—	5·0	0·5	1·0	3·0	8·5	2·5	4·0	1·0	5·5
3·3	9·32	2·37	5th	11	—	—	10	—	4	—	—	5·5	1·5	1·0	1·0	5·5	3·5	3·5	0·5	8·0
3·7	12·72	2·11	6th	19	—	—	12	—	1	—	—	4·5	2·0	2·5	2·5	6·0	6·0	2·5	0·5	4·5
3·3	24·98	3·65	23rd	22	—	—	14	—	—	—	—	5·5	1·0	3·0	2·5	3·5	3·5	5·0	0·5	5·5
2·2	32·07	4·00	30th	27	—	—	2	—	2	—	—	3·5	1·0	2·0	2·5	6·5	3·0	6·5	—	6·0
2·5	31·62	3·90	1st	19	—	—	—	—	—	—	—	4·0	1·0	2·0	—	9·0	1·5	9·5	—	4·0
2·6	40·20	6·00	27th	27	—	—	5	—	—	—	—	3·5	0·5	5·0	5·0	2·0	4·5	3·5	—	6·0
2·2	11·75	3·56	25th	19	—	—	12	—	5	—	—	4·5	2·0	3·0	1·0	5·5	3·5	7·0	1·5	3·0
1·9	9·22	2·56	6th	15	—	—	10	1	9	—	—	4·5	1·5	5·5	1·0	4·0	2·5	6·5	—	4·5
1·8	2·43	0·82	15th	6	—	—	2	1	11	—	—	1·0	0·5	7·5	1·0	7·0	1·0	9·0	1·5	2·5
2·4	175·45	6·00	27th Sept.	166	—	—	69	2	89	—	—	49·0	12·5	34·5	27·5	67·0	38·0	69·5	7·5	59·5

Long. 59° 40′ 8″ W. Height of Barometer Cistern above Sea, 30 feet 8 in.

Mean Amount of Cloudiness.	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
4·8	1·80	0·56	28th	18	—	—	—	—	—	—	1	1·0	20·5	7·0	—	—	—	—	—	2·5
4·9	1·85	0·67	27th	12	—	—	—	—	—	—	—	0·5	18·5	8·5	—	—	—	—	—	0·5
4·7	0·40	0·40	2nd	1	—	—	—	—	2	1	—	—	15·0	5·0	2·5	0·5	0·5	—	1·0	6·5
4·8	0·18	0·03	11th	9	—	—	—	—	—	—	—	—	14·5	13·5	2·0	—	—	—	—	—
4·3	0·77	0·19	6th	14	—	—	—	—	1	—	—	—	11·0	19·0	1·0	—	—	—	—	—
6·1	7·02	1·38	19th	16	—	—	2	—	—	2	—	—	12·0	15·0	3·0	—	—	—	—	—
5·2	4·93	1·01	18th	23	—	—	—	—	—	—	—	—	11·0	16·5	3·0	—	0·5	—	—	—
4·4	4·63	0·89	18th	19	—	—	4	—	—	2	—	1·5	11·5	4·0	2·0	—	—	—	—	12·0
5·2	3·00	1·45	29th	12	—	—	1	—	—	—	—	—	2·5	6·5	2·0	0·5	—	0·5	—	18·0
6·0	9·65	1·55	11th	20	—	—	5	—	—	4	—	—	6·0	8·0	3·5	—	—	—	—	13·5
6·1	8·64	1·66	16th	19	—	—	4	—	—	3	—	0·5	5·0	3·0	3·0	—	—	—	—	18·5
4·5	1·31	0·38	4th	14	—	—	—	—	—	3	—	1·0	16·5	6·0	0·5	—	—	0·5	—	6·5
5·1	44·18	1·66	16th Nov.	177	—	—	16	—	3	15	1	4·5	144·0	112·0	22·5	1·0	1·0	1·0	1·0	78·0

Appendix

Annual Abstract of Meteorological Observations taken

UP. PARK CAMP, JAMAICA. Lat. 17° 59″ N.

Month.	Mean daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.			Per Cent.	Min.	
				Min.	Max.	Temp.	Day.	Temp.	Day.		Mean.	Per Cent.	Day.
						*		*					
January -	76·2	29·795	82·3	62·2	90·2	56·0	26th	94·0	28th	·674	60	43	31st
February -	76·5	29·779	82·0	63·0	90·1	59·0	5, 6th	95·0	13th	·654	57	40	3rd
March -	75·5	29·757	82·5	61·1	90·0	57·0	3rd	96·0	30th	·673	58	42	2nd
April -	78·0	29·724	85·2	65·2	90·8	62·0	7, 12, 17, 18, 20th	95·0	23rd	·714	59	48	29th
May - -	80·1	29·728	86·2	68·8	91·5	66·0	23rd	95·0	11, 17, 18	·729	58	46	30th
June - -	80·2	29·721	86·6	69·5	91·0	67·0	17th	99·0	6th	·758	60	46	5, 30
July - -	81·6	29·751	88·9	69·4	93·9	67·0	2nd	98·0	13th	·673	48	39	28th
August -	83·0	29·749	87·7	72·4	93·6	68·0	29, 30th	98·0	20, 21st	·709	55	45	20th
September	83·2	29·717	88·5	72·7	93·7	69·0	24th	96·0	10, 11, 24	·761	57	48	24th
October -	81·4	29·671	84·7	71·8	91·0	68·0	30th	96·0	2, 17th	·781	64	54	16th
November	81·1	29·711	83·5	70·1	92·1	65·0	29th	97·0	16th	·755	64	51	25th
December -	79·7	29·751	82·9	68·5	91·1	63·0	24, 27th	94·0	10, 31st	·683	58	42	31st
Year -	79·7	29·738	85·1	67·8	91·6	56·0	26th Jan.	99·0	6th June.	·714	58	39	28th July.

NEWCASTLE, JAMAICA. Lat. 18° 6″ N.

Month.	Mean daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Mean, 9 a.m.	Means of Min.	Means of Max.	Abs. Min. Temp.	Abs. Min. Day.	Abs. Max. Temp.	Abs. Max. Day.	Tension of Vapour.	Relative Humidity Per Cent. Mean.	Relative Humidity Min. Per Cent.	Relative Humidity Min. Day.
						*		*					
January -	67·5	26·457	No instruments.	57·5	77·5	54·0	25th	85·0	31st	No instruments.			
February -	68·0	26·453		57·0	79·1	52·0	23rd	87·0	19th				
March -	67·0	26·443		56·6	77·4	51·0	2nd	87·0	11th				
April -	69·0	26·443		59·1	78·8	55·0	6, 10th	86·0	21st				
May -	70·7	26·447		62·0	80·2	60·0	1, 20, 21, 22, 23rd	88·0	26th				
June -	72·9	26·427		63·5	82·3	60·0	11th	86·0	5,6,16,17				
July -	74·0	26·399		64·1	83·9	62·0	2, 20th	89·0	27th				
August -	73·2	26·391		63·8	82·6	56·0	28th	88·0	18th				
September	73·2	26·377		63·5	83·2	53·0	21st	87·0	12th				
October -	70·2	26·316		61·6	78·8	55·0	11, 29th	86·0	2nd				
November -	70·2	26·304		60·7	79·6	57·0	23, 24th	86·0	2, 4th				
December -	67·9	26·309		55·5	80·2	49·0	17th	85·0	3rd				
Year -	70·3	29·397	—	60·4	80·3	49·0	17th Dec.	89·0	27th July	—	—	—	—

* Observations under these headings in the monthly returns are given daily in "whole Nos."

MORNE FORTUNE, ST. LUCIA. Lat. 14° 0′ 53″ N.

Month.	Mean daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Mean, 9 a.m.	Means of Min.	Means of Max.	Abs. Min. Temp.	Abs. Min. Day.	Abs. Max. Temp.	Abs. Max. Day.	Tension of Vapour.	Relative Humidity Per Cent. Mean.	Relative Humidity Min. Per Cent.	Relative Humidity Min. Day.
January -	73·5	29·262	73·4	68·3	78·7	65·7	18th	81·8	2nd	·592	74	55	6th
February -	72·4	29·278	72·5	67·0	77·9	65·0	6th	81·6	25th	·585	71	55	17th
March -	74·3	29·252	75·0	68·0	80·5	64·0	11th	84·8	25th	·597	67	54	12th
April -	77·3	29·255	78·1	71·2	83·4	67·0	5th	86·4	29th	·697	71	55	5th
May - -	78·8	29·257	80·6	72·4	85·3	68·5	9th	87·8	6th	·736	70	57	12th
June* -	78·3	29·255	80·4	72·5	84·2	69·5	19th	85·8	2, 9, 10,	·766	74	57	22nd
July -	78·6	29·265	79·5	72·7	84·5	69·4	15th	89·0	29th	·768	75	55	7th
August -	80·4	29·263	81·0	72·7	88·2	69·4	18th	90·2	5, 9, 28	·788	74	61	2nd
September	80·7	29·219	82·2	74·3	87·2	72·4	9th	89·4	1st	·778	70	52	11th
October -	80·3	29·168	80·3	73·6	87·0	71·2	14th	93·8	5th	·775	74	56	23rd
November -	77·9	29·162	79·3	72·0	83·8	66·2	29th	89·4	5th	·772	77	59	7th
December -	75·5	29·203	76·2	69·4	81·7	66·8	26th	84·0	5th	·683	75	65	23rd
Year -	77·3	29·236	78·2	71·2	83·5	64·0	11th March	93·8	5th Oct.	·711	73	52	11th Sept.

* 22 days (1st to 22nd June).

No. IX.—*continued.*

at Netley and Foreign Stations in the Year 1891.

Long. 76° 56′ W. Height of Barometer Cistern above Sea, 245 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.								
				Number of Days of								Means of Observations under each Point per Month.								
	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
3·4	1·41	0·60	18th	8	—	—	—	—	7	1	—	—	2·5	0·5	13·0	0·5	5·0	0·5	—	9·0
3·3	0·37	0·10	19th	7	—	—	—	—	2	1	—	2·0	0·5	—	16·5	0·5	1·0	—	—	7·5
3·2	0·08	0·03	7, 11	3	—	—	—	—	—	—	—	—	1·5	—	14·0	0·5	5·0	—	—	10·0
4·2	2·10	1·25	10th	4	—	—	1	—	2	2	—	—	3·5	—	15·5	1·5	4·5	0·5	1·5	3·0
5·0	1·87	0·40	12th	11	—	—	2	—	1	2	—	1·5	2·5	—	15·0	1·0	4·0	—	1·0	6·0
5·0	6·67	2·57	12th	8	—	—	3	—	1	4	—	1·5	0·5	0·5	17·5	0·5	2·5	—	0·5	6·5
3·4	0·89	0·35	20th	5	—	—	3	—	7	1	—	0·5	2·5	—	17·5	—	2·0	0·5	0·5	7·5
4·5	3·81	2·25	28th	14	—	—	7	—	3	3	—	—	6·5	1·0	10·0	1·0	1·0	—	0·5	11·0
4·2	2·68	0·73	14th	13	—	—	5	—	1	—	—	0·5	3·0	—	9·5	1·5	0·5	0·5	—	14·5
5·7	12·26	3·22	5th	21	—	—	4	—	—	8	—	—	2·5	—	7·0	0·5	2·0	—	1·5	17·5
4·3	4·72	1·48	21st	11	—	—	—	—	4	2	—	0·5	5·0	—	11·0	2·0	3·0	—	1·0	7·5
2·4	0·92	0·25	11th	6	—	—	—	—	10	1	—	1·0	9·5	1·5	6·5	2·0	5·5	1·0	1·0	3·0
4·0	37·78	3·22	5th Oct.	111	—	—	25	—	38	25	—	7·5	40·0	3·5	153·0	11·5	36·0	3·0	7·5	103·0

Long. 76° 42″ W. Height of Barometer Cistern above Sea, 3,800 feet.

5·0	4·08	1·75	19th	14	—	—	—	—	7	1	1	0·5	9·5	9·0	0·5	—	—	—	—	11·5
4·9	7·79	2·80	28th	10	—	—	—	—	6	4	—	0·5	8·5	6·5	0·5	0·5	—	0·5	—	11·0
5·3	1·07	0·50	16th	5	—	—	—	1	3	4	—	1·5	8·0	4·0	0·5	—	—	—	0·5	16·5
6·0	11·05	2·80	10th	14	—	—	—	—	2	5	—	1·5	9·5	4·0	0·5	—	—	—	—	14·5
6·9	19·55	4·60	14th	18	—	—	2	—	1	9	—	—	8·5	4·0	—	—	—	—	—	18·5
6·5	14·77	4·30	12th	18	—	—	5	—	1	7	—	0·5	7·5	5·0	—	—	—	—	—	17·0
4·9	3·11	1·85	20th	8	—	—	2	—	3	3	—	—	2·5	8·5	—	—	—	—	—	20·0
5·5	10·75	3·75	28th	14	—	—	—	—	4	9	—	0·5	3·5	9·5	0·5	—	—	—	—	17·0
5·6	20·74	5·73	5th	16	—	—	4	—	2	7	—	0·5	4·5	6·5	—	—	—	—	0·5	18·0
6·4	19·95	5·63	24th	25	—	—	2	—	1	9	—	—	9·0	13·0	0·5	—	—	—	—	8·5
5·5	14·21	5·40	15th	16	—	—	—	—	3	7	—	—	12·0	11·0	—	—	—	—	0·5	6·5
4·0	3·12	0·60	31st	15	—	—	—	—	6	3	—	9·0	5·5	4·0	—	—	—	0·5	3·0	9·0
5·5	130·19	5·73	5th Sept.	173	—	—	15	1	39	68	1	14·5	88·5	85·0	3·0	0·5	—	1·0	4·5	168·0

Long. 61° 0′ 25″ W. Height of Barometer Cistern above Sea, 790 feet.

5·2	3·90	·62	30th	25	—	—	—	—	1	—	—	1·0	14·5	13·5	2·0	—	—	—	—	—
5·5	5·01	1·13	27th	25	—	—	—	—	—	2	6	0·5	11·0	14·0	2·5	—	—	—	—	—
4·7	1·27	0·40	3rd	13	—	—	—	—	—	1	—	0·5	13·5	9·0	5·0	—	1·5	0·5	1·0	—
4·8	2·13	0·37	16th	20	—	—	—	—	—	1	—	—	5·0	20·5	4·5	—	—	—	—	—
4·5	5·67	0·90	26th	25	—	—	—	—	—	—	—	—	—	21·0	10·0	—	—	—	—	—
6·0	8·07	2·00	17th	17	—	—	—	—	—	4	—	—	1·5	13·5	7·0	—	—	—	—	—
6·4	10·69	2·10	18th	29	—	—	—	—	—	5	—	—	5·0	18·0	5·5	—	—	—	—	2·5
6·0	10·57	1·56	24th	28	—	—	—	—	—	3	—	—	8·0	16·0	6·5	—	—	—	—	0·5
4·2	3·78	1·10	15th	13	—	—	—	—	2	—	—	1·0	1·5	13·0	8·0	—	—	—	—	6·5
6·1	9·25	2·75	13th	25	—	—	—	—	—	6	2	—	7·5	9·0	5·5	—	—	—	0·5	8·5
5·2	10·06	1·28	16, 28	18	—	—	—	—	—	1	—	—	4·0	9·0	10·5	—	—	—	—	6·5
6·6	5·25	0·95	4th	22	—	—	—	—	—	3	—	0·5	16·0	5·5	3·0	—	—	—	1·5	4·5
5·4	75·65	2·75	13th Oct.	260	—	—	—	—	3	26	8	3·5	87·5	162·0	70·0	—	1·5	0·5	3·0	29·0

Appendix

Annual Abstract of Meteorological Observations taken

Nassau, Bahamas. Lat. 25° 5′ N.

Month.	Mean Daily Air Temperature.	Mean Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative Humidity		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.			Per Cent.	Min.	
				Min.	Max.	Temp.	Day.	Temp.	Day.		Mean.	Per Cent.	Day.
January	70·4	30·091	71·1	63·2	77·6	57·3	1st	83·0	23rd	·527	67	54	19th
February	74·8	30·073	75·7	67·0	82·7	62·7	24th	85·8	5th	·648	71	59	27th
March	73·8	29·989	75·6	65·5	82·1	59·0	4th	87·5	9th	·567	62	50	29th
April	73·9	29·974	76·3	65·8	82·1	58·7	7th	90·3	3rd	·628	69	52	1st
May	76·8	29·948	79·5	68·3	85·3	63·0	11, 16th	91·3	25th	·695	68	49	16th
June	80·2	29·944	82·8	72·6	87·8	69·0	1st	92·7	23rd	·819	72	56	2nd
July	83·4	30·036	85·4	75·6	91·2	71·7	13th	94·5	9th	·849	67	58	31st
August	83·5	29·994	85·6	75·5	91·5	72·0	14th	96·0	19th	·847	67	56	28th
September	82·0	29·962	84·3	74·4	89·7	70·0	19, 25th	97·0	7th	·816	69	54	24th
October	78·3	29·947	79·6	71·9	84·7	67·3	9th	91·3	12th	·684	67	49	2nd
November *	—	—	—	—	—	—	—	—	—	—	—	—	—
December	—	—	—	—	—	—	—	—	—	—	—	—	—
Year	—	—	—	—	—	—	—	—	—	—	—	—	—

* Garrison withdrawn.

Bermuda. Lat. 32° 17′ 40″ N.

January	62·4	29·995	62·9	57·2	67·6	48·0	10th	71·3	25th	·463	79	69	2nd
February	64·3	30·067	65·2	59·1	69·5	52·0	15th	74·0	27th	·512	82	62	15th
March	61·2	29·840	62·1	56·3	66·1	49·5	16th	72·5	14th	·464	81	64	15th
April	64·0	29·953	65·7	59·0	69·0	55·2	1st	74·3	24th	·501	78	61	12th
May	68·3	29·952	70·2	63·5	73·0	57·8	9th	78·7	29th	·597	80	64	19th
June	74·1	29·886	76·1	68·8	79·4	63·7	17th	83·2	24th	·744	81	64	29th
July	78·3	30·023	80·5	72·9	83·7	69·5	7th	87·2	24th	·867	81	64	13th
August	79·0	29·933	80·9	73·8	84·3	70·0	2, 21st	87·6	4, 15th	·869	81	70	15th
September	76·6	29·878	78·3	72·7	80·6	67·5	25th	84·7	5th	·734	74	59	19th
October	72·6	29·856	74·2	68·4	76·7	61·0	24th	82·2	11, 15th	·656	77	52	31st
November	67·8	29·915	69·4	64·0	71·7	59·8	7th	75·7	18th	·565	76	62	15th
December	64·3	30·081	65·0	60·0	68·5	53·0	19th	75·3	8th	·449	69	53	29th
Year	69·4	29·948	70·8	64·6	74·2	48·0	10th Jan.	87·6	4, 15th August.	·618	78	52	31st Oct.

Fort Canning, Singapore. Lat. 1° 16′ N.

January	80·3	29·765	80·2	71·8	88·9	70·2	13th	91·0	25th	·871	78	69	23rd
February	80·6	29·781	80·5	71·8	89·4	69·6	5th	93·2	24, 26th	·806	76	72	28th
March	80·9	29·767	81·6	72·6	89·2	71·2	23rd	92·2	1st	·825	75	69	24th
April	81·4	29·750	83·0	73·3	89·4	69·4	7th	92·2	13, 18th	·860	75	70	7th
May	82·5	29·721	83·5	75·0	90·0	73·4	25th	94·3	4th	·911	78	70	14th
June	82·1	29·735	84·3	74·4	89·9	72·3	19th	94·2	11th	·936	77	70	13th
July	82·3	29·725	83·9	74·2	90·5	71·2	30th	93·2	31st	·908	75	69	4th
August	81·5	29·759	83·1	72·7	90·3	69·4	14th	92·0	6, 17th	·895	77	72	26th
September	81·9	29·763	83·3	73·0	90·8	71·0	8, 9, 11th	93·0	20th	·899	76	72	17th
October	81·6	29·736	83·5	73·4	89·8	70·2	4th	92·4	28th	·890	75	67	6th
November	80·8	29·746	82·2	72·8	88·6	70·0	16th	92·2	6, 8, 10th	·850	75	68	3rd
December	80·0	29·761	81·5	72·4	87·6	70·0	1st	91·2	8th	·863	77	68	3rd
Year	81·3	29·751	82·5	73·1	89·5	69·4	7th Apr. 14 Aug.	94·3	4th May	·876	76	67	6th Oct.

No. IX.—*continued.*

at Netley and Foreign Stations in the Year 1891.

Long. 77° 21′ W. Height of Barometer Cistern above Sea, 47 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.								
				Number of Days of								Means of Observations under each Point per Month.								
	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
6·8	1·56	1·17	22nd	6	—	—	1	—	—	10	—	5·0	5·0	7·5	5·5	3·0	0·5	1·5	3·0	—
7·1	2·11	1·17	22nd	11	—	—	2	—	—	7	—	3·0	3·0	3·0	7·5	3·0	0·5	2·5	5·5	—
6·0	0·61	0·45	16th	6	—	—	—	2	—	6	—	2·0	3·5	8·5	8·5	4·0	1·5	1·5	0·5	1·0
7·2	5·24	2·75	17th	9	—	—	3	—	—	13	—	4·0	8·0	6·0	2·0	3·5	2·5	1·0	2·0	1·0
6·5	2·44	1·06	27th	7	—	—	—	—	2	10	—	4·5	8·0	3·5	0·5	4·5	0·5	2·0	5·0	2·5
7·9	8·72	2·91	10th	19	—	—	6	—	1	18	—	2·0	8·0	3·5	4·5	7·0	0·5	0·5	1·5	2·5
8·2	4·14	1·80	12th	14	—	—	4	—	—	17	—	—	1·0	12·0	15·0	1·0	—	0·5	0·5	1·0
7·8	3·53	0·73	4th	14	—	—	8	—	—	11	—	1·5	3·5	13·0	9·0	—	1·0	—	—	3·0
8·1	12·06	2·43	18th	17	—	—	13	—	—	15	—	2·5	8·5	9·0	8·0	0·5	—	—	—	1·5
7·9	9·77	4·57	1st	13	—	—	3	—	—	16	—	4·0	13·0	4·0	4·0	4·0	0·5	—	0·5	1·0
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Long. 64° 47′ W. Height of Barometer Cistern above Sea, 151 feet.

5·0	3·61	0·79	12th	17	—	—	1	—	2	3	—	2·0	3·0	1·5	2·5	4·5	6·0	2·5	7·5	1·5
5·4	4·58	1·98	24th	14	—	—	1	—	—	2	—	2·5	4·0	1·0	2·0	2·5	14·5	0·5	1·0	—
5·1	6·58	1·86	22nd	20	—	—	2	—	—	2	—	7·0	2·5	3·5	4·5	1·0	3·0	1·5	6·5	1·5
4·8	5·70	1·67	25th	9	—	—	2	—	1	4	—	5·5	3·0	1·0	6·0	1·5	4·5	3·0	3·5	2·0
4·5	7·63	2·16	23, 24	8	—	—	—	—	2	3	—	1·5	7·0	2·5	6·5	4·5	5·5	—	3·5	—
3·8	5·81	1·53	13th	13	—	—	—	—	8	2	—	0·5	2·5	2·0	0·5	5·0	10·5	3·0	2·5	3·5
3·3	4·48	1·23	6th	13	—	—	3	—	10	2	—	—	0·5	3·0	8·0	5·0	12·0	1·5	—	1·0
3·9	12·49	5·64	20th	14	—	—	2	—	8	3	1	0·5	2·5	—	3·5	2·5	9·0	4·5	4·0	4·5
4·3	8·91	4·95	21st	10	—	—	1	—	5	5	2	2·5	7·5	6·0	6·5	1·0	2·5	0·5	2·5	1·0
5·2	9·42	3·18	17th	13	—	—	2	—	4	7	2	1·0	5·0	2·0	4·0	3·5	9·5	—	3·0	3·0
5·4	4·89	1·09	3rd	19	—	—	1	—	2	5	1	4·5	6·0	2·5	2·0	3·5	2·5	1·5	2·5	5·0
4·5	0·99	0·33	30th	9	—	—	—	—	2	2	—	4·5	4·5	4·0	1·5	4·0	3·5	1·5	5·0	2·5
4·6	75·09	5·64	20 Aug.	159	—	—	15	—	44	40	6	32·0	48·0	29·0	47·5	38·5	83·0	20·0	41·5	25·5

Long. 103° 53′ E. Height of Barometer Cistern above Sea, 110 feet.

4·2	9·24	1·24	14th	18	—	—	—	—	—	—	—	11·0	6·5	—	—	—	—	0·5	13·0	—
3·1	5·25	1·60	20th	10	—	—	1	—	—	—	—	15·0	2·0	—	3·0	—	—	—	8·0	—
3·6	7·52	1·20	22nd	16	—	—	—	—	—	—	—	11·0	4·0	0·5	—	—	1·0	4·5	10·0	—
4·0	6·59	1·20	22nd	10	—	—	5	—	—	—	—	0·5	—	—	2·5	5·5	12·0	4·0	5·5	—
4·4	6·92	1·10	18th	15	—	—	2	—	—	1	—	—	—	—	0·5	15·5	14·0	1·0	—	—
3·6	6·89	1·10	20th	12	—	—	3	—	—	—	—	—	—	—	5·0	11·5	10·0	3·5	—	—
3·8	3·82	1·60	22nd	8	—	—	—	—	—	—	—	—	—	—	1·0	12·5	12·0	4·5	1·0	—
4·0	7·58	1·40	31st	15	—	—	—	—	—	—	—	—	—	—	—	2·5	10·5	15·0	3·0	—
4·0	9·09	2·25	26th	12	—	—	—	—	—	—	—	—	—	—	—	4·5	16·0	9·5	—	—
4·0	6·10	1·94	24th	13	—	—	—	—	—	—	—	—	—	—	0·5	13·0	12·5	4·5	0·5	—
4·9	7·25	0·92	26th	17	—	—	—	—	2	3	—	—	—	—	4·0	4·0	5·5	7·0	9·5	—
3·8	4·32	0·68	10th	13	—	—	—	—	6	2	—	4·5	—	—	—	—	—	13·0	13·5	—
3·9	80·57	2·25	26th Sept.	159	—	—	11	—	8	6	—	42·0	12·5	0·5	16·5	69·0	93·5	67·0	64·0	—

Appendix

Annual Abstract of Meteorological Observations taken

HONG KONG. Lat. 22° 16′ 20″ N.

Month.	Mean Daily Temp.	Mean Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative Humidity.		
			Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.			Per Cent.	Minimum.	
				Min.	Max.	Temp. *	Day.	Temp. *	Day.		Mean.	Per Cent.	Day.
January	65·6	30·130	64·7	59·3	72·0	51·0	16th	79·0	27th	·429	64	43	15th
February	61·8	30·155	60·7	56·1	67·5	47·0	12, 13th	83·0	24th	·435	76	51	16th
March	64·0	30·047	62·9	59·6	68·4	51·0	17th	79·0	1st	·489	82	63	28th
April	70·1	29·964	69·9	66·0	74·3	54·0	8th	85·0	27th	·608	80	48	8th
May	79·0	29·794	78·9	74·1	84·0	69·0	6, 18th	90·0	11, 12	·796	79	56	1st
June	82·2	29·685	82·8	77·9	86·5	75·0	10, 11, 15, 17, 24, 25	93·0	4th	·887	79	58	15th
July	83·8	29·639	84·4	79·3	88·3	75·0	19th	93·0	28, 29	·892	79	58	17, 25, 27 28, 29, 30
August	84·5	29·703	85·7	79·5	89·5	75·0	10, 19th	95·0	23rd	·882	71	56	1st
September	84·0	29·763	84·7	78·3	89·6	75·0	18, 20, 26, 28	95·0	9th	·818	67	52	22, 23
October	81·6	29·936	82·5	76·7	86·5	71·0	30, 31st	90·0	7, 8, 19	·819	73	58	19th
November	71·9	30·059	72·2	66·7	77·2	59·0	26th	87·0	4th	·535	64	46	12th
December	66·1	30·186	65·6	60·0	72·2	49·0	5th	83·0	3rd	·455	67	47	4th
Year	74·6	29·922	74·6	69·5	79·7	47·0	12 & 13 Feb.	95·0	23 Aug. 9 Sept.	·670	73	43	15th Jan.

SANITARIUM, HONG KONG. Lat. 22° 16′ 20″ N.

Month.	Mean Daily Temp.	Mean Pressure corrected and reduced to 32° F.	Mean, 9 a.m.	Means of Min.	Means of Max.	Abs. Min. Temp. *	Abs. Min. Day.	Abs. Max. Temp. *	Abs. Max. Day.	Tension of Vapour.	Relative Humidity Per Cent. Mean.	Minimum Per Cent.	Minimum Day.
January		No Instruments.								No instruments.			
February													
March													
April													
May													
June	77·6			72·8	82·5	70·0	17th	89·0	4th				
July	79·8			76·1	83·5	70·0	1st	88·0	17th				
August	75·6			67·3	84·0	54·0	26th	88·0	12, 13, 23				
September	72·3			60·8	83·7	57·0	18th	89·0	7th				
October	70·6			59·4	81·7	55·0	29, 31st	85·0	7th				
November	67·9			64·2	71·5	52·0	25th	82·0	4, 5th,				
December	60·9			55·2	66·6	45·0	4th	78·0	3rd				
Year	—			—	—	—	—	—	—				

* Observations under these headings are given daily in "whole Nos." in the Monthly Returns.

No. IX.—*continued.*

at Netley and Foreign Stations in the Year 1891.

Long. 114° 8′ 16″ E. Height of Barometer Cistern above Sea, 18 feet.

Mean Amount of Cloudiness.	Rainfall.			Weather.								Wind.								
				Number of Days of								Means of Observations under each Point per Month.								
	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	NW.	Calm.
3·6	0·05	0·05	13th	1	—	—	—	—	13	2	—	0·5	17·5	7·0	—	—	0·5	1·0	1·0	3·5
7·7	0·18	0·15	7th	2	—	—	—	—	3	16	—	2·0	14·5	1·5	0·5	1·0	0·5	—	—	8·0
9·0	2·46	1·27	16th	9	—	—	—	—	1	24	—	2·5	18·5	3·0	—	—	—	0·5	1·0	5·5
8·3	3·55	1·45	3rd	15	—	—	3	—	1	20	—	1·5	11·5	6·5	3·0	—	1·0	0·5	1·0	5·0
6·8	33·30	8·65	13th	12	—	—	4	—	1	11	—	0·5	4·0	6·0	3·0	3·5	5·5	0·5	1·5	6·5
7·1	24·75	5·30	23rd	16	—	—	4	—	3	15	—	—	7·5	4·5	1·5	2·5	2·5	2·0	4·5	5·0
5·5	26·80	5·00	18th	19	—	—	2	3	9	6	—	3·0	6·5	8·5	1·0	3·0	4·0	1·0	0·5	3·5
5·4	17·64	3·20	8th	17	—	—	—	—	4	6	—	2·5	7·0	6·5	2·5	3·5	1·5	4·0	1·0	2·5
3·9	12·49	2·70	17th	13	—	—	—	—	9	3	—	0·5	6·5	6·0	0·5	0·5	2·5	3·5	2·0	8·0
3·9	8·56	1·60	22nd	14	—	—	—	—	7	4	—	2·0	11·0	9·5	2·0	3·0	—	—	—	3·5
3·8	2·82	2·65	8th	3	—	—	—	—	12	4	—	4·0	17·0	3·0	1·0	—	—	—	2·5	2·5
4·3	1·65	1·65	29th	1	—	—	—	—	11	6	—	0·5	14·5	6·0	—	—	—	1·5	0·5	8·0
5·8	134·25	8·65	13th May	122	—	—	13	3	74	117	—	19·5	136·0	68·0	15·0	17·0	18·0	14·5	15·5	61·5

Long. 114° 9′ 16″ E. Height of Barometer Cistern above Sea, 911 feet.

Mean Amount of Cloudiness.	Total.	Max.	Day.	Rain.	Snow.	Hail.	Thunder Storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	NW.	Calm.
5·7	25·38	5·55	24th	14	—	—	3	—	2	6	—	—	6·0	1·0	2·5	1·5	11·5	0·5	—	7·0
4·4	23·82	5·80	5th	22	—	—	2	—	1	1	—	—	1·0	1·0	2·5	0·5	8·5	—	—	17·5
5·8	12·19	2·60	2nd	21	—	—	1	—	1	7	—	—	3·5	3·5	5·0	1·0	3·5	—	2·5	12·0
5·2	12·76	3·25	3rd	13	—	—	2	5	7	6	—	—	20·0	1·0	—	—	—	—	—	9·0
6·3	7·50	1·75	22nd	15	—	—	1	2	—	7	—	—	10·0	2·5	0·5	—	—	—	—	18·0
5·2	3·15	2·65	8th	2	—	—	1	—	8	7	—	—	19·0	1·0	—	—	—	—	—	10·0
6·0	1·86	1·40	29th	5	—	—	1	1	3	9	—	—	17·5	2·5	—	—	—	—	—	11·0
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Appen

Summary of Results of Meteorological Observati

Stations.	Altitude, above Sea level.	Latitude.	Longitude.	Mean Daily Air Temp.	Air Pressure corrected and reduced to 32° F.	Air Temperature.							Tension of Vapour.	Relative H		
						Mean, 9 a.m.	Means of		Abs. Min.		Abs. Max.			Per Cent.	M	
							Min.	Max.	Temp.	Date.	Temp.	Date.		Mean.	Per Cent.	Date.
editerranean:	ft.	° ′ ″	° ′ ″													
Gibraltar -	53	36 6 20 N.	5 20 53 W.	63·4	29·939	62·4	57·8	69·0	33·0	8 Jan.	90·4	16 Aug.	·424	70	43	[illegible]
Malta -	70	35 53 49 N.	14 30 54 E.	66·2	29·954	66·5	60·9	71·1	38·2	20 Feb.	94·0	6 Aug.	·531	76	46	[illegible]
Scutari -	60	41 0 0 N.	29 3 0 E.	58·3	29·939	57·9	49·4	67·2	25·8	2 Mar.	99·6	19 Aug.	·379	69	31	[illegible]
Cyprus:																
Polymedia	460	34 40 0 N.	32 2 0 E.	—	—	—	—	—	—	—	—	—	—	—	—	—
Troodos -	5,720	34 55 0 N.	32 53 0 E.	—	—	—	—	—	—	—	—	—	—	—	—	—
atal, Fort Napier.	2,220	29 3 0 S.	30 2 0 E.	66·1	27·694	67·3	53·9	78·3	34·5	15 Aug.	101·4	22 Oct.	·437	59	24	[illegible]
ierra Leone -	224	8 29 30 N.	13 9 17 W.	81·5	29·671	81·1	72·7	90·3	60·0	19 April 2 & 4 Aug.	100·0	24 Mar.	·852	78	51	[illegible]
est Indies:																
Barbados -	30¾	13 7 39 N.	59 40 8 W.	77·8	30·017	82·2	69·2	86·2	59·5	23 Mar.	93·6	29 Sept.	·747	65	37	[illegible]
amaica:																
Up. Park Camp.	245	17 0 59 N.	76 56 0 W.	79·7	29·738	85·1	67·8	91·6	56·0	26 Jan.	99·0	6 June	·714	58	39	[illegible]
Newcastle,	3,800	18 0 6 N.	76 0 42 W.	70·3	29·397	—	60·4	80·3	49·0	17 Dec.	89·0	27 July	—	—	—	—
St. Lucia -	790	14 0 53 N.	61 0 25 W.	77·3	29·236	78·2	71·2	83·5	64·0	11 Mar.	93·8	5 Oct.	·711	73	52	[illegible]
Nassau, Bahamas.	47	25 5 0 N.	77 21 0 W.	—	—	—	—	—	—	—	—	—	—	—	—	—
Bermuda -	151	32 17 40 N.	64 47 0 W.	69·4	29·948	70·8	64·6	74·2	48·0	10 Jan.	87·6	4 & 15 Aug.	·618	78	52	[illegible]
ngapore, Fort Canning.	110	1 16 0 N.	103 53 0 E.	81·3	29·751	82·5	73·1	89·5	69·4	7 April 14 Aug.	94·3	4 May	·876	76	67	[illegible]
ong Kong -	18	22 16 20 N.	114 8 16 E.	74·6	29·922	74·6	69·5	79·7	47·0	12 & 13 Feb.	95·0	23 Aug 9 Sep.	·670	73	43	[illegible]
" " Sanitarium.	911	22 16 20 N.	114 9 16 E.	—	—	—	—	—	—	—	—	—	—	—	—	—

No. IX.—*continued.*

taken at Foreign Stations in the Year 1891.

Mean Amount of Cloudiness.	Rainfall.			Weather. Number of Days of								Wind. Means of Observations under each Point per Month.									Remarks. No. of Months in which Observations were taken.
	Total.	Max.	Date.	Rain.	Snow.	Hail.	Thunder-storm.	Fog.	Clear Sky.	Overcast.	Gales.	N.	N.E.	E.	S.E.	S.	S.W.	W.	NW.	Calm.	
4·7	43·97	5·45	31 Oct.	83	—	2	9	—	—	—	—	1·5	11·5	151·5	3·5	—	13·0	152·0	31·0	1·0	12 months.
3·2	18·14	1·46	7 Feb.	86	—	9	3	—	158	34	—	8·5	30·0	9·0	18·0	4·0	10·0	17·5	34·0	234·0	12 „
5·4	33·78	4·03	29 Aug.	135	35	1	24	10	77	99	2	62·5	112·0	43·0	6·5	46·5	38·0	8·0	5·0	43·5	12 „
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8 „
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4 „
4·7	46·36	3·50	15 Mar.	147	—	6	53	—	104	82	1	19·0	23·0	86·0	24·0	39·5	6·0	9·5	11·5	139·5	12 „
2·4	175·45	6·00	27 Sept.	166	—	—	69	2	89	—	—	49·0	12·5	34·5	27·5	67·0	38·0	69·5	7·5	59·5	12 „
5·1	44·18	1·66	16 Nov.	177	—	—	16	—	3	15	1	4·5	144·0	112·0	22·5	1·0	1·0	1·0	1·0	78·0	12 „
4·0	37·78	3·22	5 Oct.	111	—	—	25	—	38	25	—	7·5	40·0	3·5	153·0	11·5	36·0	3·0	7·5	103·0	12 „
5·5	130·19	5·73	5 Sept.	173	—	—	15	1	39	68	1	14·5	88·5	85·0	3·0	0·5	—	1·0	4·5	168·0	12 „
5·4	75·65	2·75	13 Oct.	260	—	—	—	—	3	26	8	3·5	87·5	162·0	70·0	—	1·5	0·5	3·0	29·5	12 „
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10 „
4·6	75·09	5·64	20 Aug.	159	—	—	15	—	44	40	6	32·0	48·0	29·0	47·5	38·5	83·0	20·0	41·5	25·5	12 „
3·9	80·57	2·25	26 Sept.	159	—	—	11	—	8	6	—	42·0	12·5	0·5	16·5	69·0	93·5	67·0	64·0	—	12 „
5·8	134·25	8·65	13 May	122	—	—	13	3	74	117	—	19·5	136·0	68·0	15·0	17·0	18·0	14·5	15·5	61·5	12 „
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7 „

APPENDIX No. X.

THE PARKES MEMORIAL PRIZE.

Surgeon-General Sir T. LONGMORE, Kt., C.B., *President of Committee.*
Brigade-Surgeon-Lieut.-Colonel J. LANE-NOTTER, M.A., M.D., *Treasurer.*
Surgeon-Captain R. H. FIRTH, F.R.C.S., *Secretary.*

Prize Essay Gold Medallists.

1883.	Surgeon R. J. POLDEN, Indian Medical Service.
1886.	Surgeon ANDREW DUNCAN, M.D., Indian Medical Service.
1889.	Surgeon R. H. FIRTH, F.R.C.S., Medical Staff.
1892.	Surgeon-Captain R. H. FIRTH, F.R.C.S., Army Medical Staff.

The following is the subject for the next prize:—

"MALARIAL FEVERS: THEIR CAUSATION AND PREVENTION."

The Prize is Seventy-five Guineas in Money and a Gold Medal, and is awarded Triennially.

The Competition is open to all Medical Officers of the Army, Navy, and Indian Services of Executive Rank on full pay, with the exception of the Assistant Professors of the Army Medical School during their term of Office. Essays to be sent to the Secretary of the "Parkes Memorial Fund," Royal Victoria Hospital, Netley, on or before the 31st day of December 1894. Each Essay to have a Motto, and to be accompanied with a sealed envelope bearing the same Motto and containing the name of the Competitor.

APPENDIX No. XI.

THE ALEXANDER MEMORIAL FUND.

Trustees.

Surgeon-Major-General Sir W. A. Mackinnon, K.C.B., Director-General.
Deputy-Surgeon-General W. G. Don, M.D.

Committee.

Surgeon-Major-General Sir W. A. Mackinnon, K.C.B., Director-General, *President.*
Sir T. Crawford, K.C.B., M.D., Hon. Surgeon to the Queen, *late* Director-General.
Deputy Surgeon-General J. A. Bostock, C.B., Hon. Surgeon to the Queen.
Surgeon-Lieutenant-Colonel Alfred F. S. Clarke, M.D. (Hon. Brigade Surgeon).
Surgeon-General J. Irvine, M.D., Hon. Physician to the Queen.
Brigade-Surgeon-Lieutenant-Colonel W. Johnston, M.D.
Deputy-Surgeon-General W. G. Don, M.D.
Brigade-Surgeon-Lieutenant-Colonel W. Stevenson, M.B., Professor of Military Surgery.
Surgeon-Lieutenant-Colonel W. E. Webb, M.D., *Honorary Secretary.*

Prize Essay Gold Medallists.

1870.	Assistant Surgeon A. B. R. Myers, Coldstream Guards.
1873.	Surgeon F. H. Welch, Medical Department.
1876.	Surgeon-Major J. H. Porter, Medical Department.
1879.	Surgeon John Martin, Medical Department.
1882.	Surgeon-Major F. H. Welch, Medical Department.
1885.	Surgeon John Martin, Medical Staff.
1888.	Surgeon Robert Hammill Firth, Medical Staff.
1891.	Surgeon Robert Hammill Firth, Medical Staff.

At a meeting of the Committee held at 18, Victoria Street, S.W., on 6th March 1891, the prize of 50*l.* and Gold Medal of the value of 10*l.* was awarded to Surgeon Robert Hammill Firth, F.R.C.S., Medical Staff, for the best Essay on "The Use of Drugs in the Treatment of Disease in the Army, the Principles on which Medicines should be selected so as to meet the requirements of Field Service."

The essays of the unsuccessful competitors for the 1891 prize will be returned on application being made to the Honorary Secretary before 31st December 1893, but the unclaimed essays of unsuccessful competitors on previous occasions have, in accordance with the intimation in last year's volume, now been destroyed.

The subject for the next competition is "The Treatment of Wounds and Injuries of the Abdominal Viscera, as likely to be met with in Military Practice."

Essays to be despatched so as to reach the President of the Committee on or before 31st December 1893.

Essays are to be legibly written, superscribed with a brief motto, and accompanied by a sealed envelope similarly superscribed, containing the name and address of the author.

No essay shall exceed in length fifty pages of ordinary printed octavo, which may be estimated as amounting to 20,000 words (a page of octavo containing about 400 words). This limit to be exclusive of tables which may be added in the form of appendices.

The competition is limited to executive medical staff officers on full pay, but Assistant Professors at Netley are not allowed to compete while so employed.

W. E. Webb, Surgeon-Lieutenant-Colonel, *Hon. Sec.*

LONDON: Printed by HARRISON and SONS,
Printers in Ordinary to Her Majesty.
For Her Majesty's Stationery Office.

3 Gal
1+

3 2044 102 974 896